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JOURNAL

OF THE

MILITARY SERVICE INSTITUTION

OF THE

UNITED STATES

VOLUME XXXVI



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BRIG.-GEN. T. F. RODENBOUGH, U. S. A., EDITOR.

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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

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Seaman Prize Essay.

MILITARY HYGIENE: HOW BEST TO ENFORCE ITS STUDY IN OUR MILITARY AND NAVAL SCHOOLS AND PROMOTE ITS INTELLIGENT PRACTICE IN OUR ARMY.

BY CAPTAIN PETER E. TRAUB, THIRTEENTH CAVALRY.

GOLD MEDALIST, M.S.I.U.S.

HYGIENE considered with special reference to preserving the health of the soldier, is called military hygiene, whereas, that hygiene which applies the principles to the "conditions peculiar to life at sea and especially as existing in ships of war" is called naval hygiene.

At times the soldier serves aboard ship, as in transports, and at times the sailor serves ashore; it consequently becomes necessary for the soldier to know something of the special application of the principles of hygiene to life on ship board, and for the sailor to know something about the special application of these same principles to life in camp.

Since the term *military* has been legally construed to apply at times equally to both the army and the navy, we shall assume that the expression *military hygiene* applies equally to the hygiene of the soldier and the hygiene of the sailor, remembering, however, that when we speak of instruction in military hygiene in army schools we mean that instruction to deal more particularly with the peculiar conditions surrounding the life

of the soldier; and that when we speak of instruction in military hygiene in naval schools we mean that instruction to deal more particularly with the peculiar conditions surrounding the life of the sailor.

The curriculum of our national military and naval schools, prescribed by those in authority, is the result of experience and necessity—it is a growth gradually attained. Since this curriculum is considered best adapted to the special needs of the respective institutions, it begets a conservatism that is opposed to any change unless the urgent necessity for such change is imperatively apparent.

The military and naval schools in our country at present *enforcing the study* of military hygiene are the Army Medical School, the Navy Medical School, the Infantry and Cavalry School, and, under General Orders 115, at each military post, the garrison school where the youngest officers of our army will be expected to devote ten hours of their lifelong career to recitations upon their ever present duty of preserving the health of their men.

In institutions like the Military Academy at West Point and the Naval Academy at Annapolis, when courses of study are *prescribed* they are enforced by text-books, recitations, markings, examinations to determine proficiency, penalties in case of deficiency, assignment of a certain number to the subject to serve as a standard in helping to fix graduation standing.

In these institutions a mere course of lectures on military hygiene, without text-books, recitations, markings, examinations, penalties, or assigned number as a standard, cannot be considered as an *enforcement of the study* of that subject. Such a course looks more like a concession to preserve from without than like a prescription deemed necessary to fulfil the objects and aims for which those institutions were founded.

We do not deem the Army and Navy Medical Schools as coming under the first subdivision of our theme because we believe that this portion of the subject under discussion is intended to deal with enforcing the study of military hygiene in those schools where are educated young men who are destined, in great part, to command our soldiers and our sailors, in peace and in war. These two service medical schools, however, play an important part in promoting the intelligent practice of military hygiene; we shall therefore, treat of the

Army Medical School when we discuss the second subdivision of our theme.

The absolute necessity for the systematic instruction and education in military hygiene, of the army and navy officer while they are still undergraduates, has not yet been fully conceded by the authorities at the military and the naval academies nor by the War and the Navy Departments; nor have the latter authorities conceded the great necessity for officers of all grades to have a knowledge of this subject other than what they have gained by sad experience in the past, or what they may gain by equally sad experience in the future.

Before we show how to enforce the study of military hygiene in our military and naval schools, we deem it of great importance to bring out clearly the urgent need of this study on the part, not only of the undergraduates in those schools, but also of every line officer, of whatever grade.

No one single element of all those that make for efficiency has a greater influence on the success of an army in the field than *health*. "Health," says Napoleon, "is indispensable in war, and cannot be replaced by anything."

Thirty-three years elapsed between the close of our civil war and the beginning of our war with Spain. No country in the world, no officers of any army, had greater opportunity than had the United States and the officers of its army, to become thoroughly familiar with the causes of ill health on the part of troops in the field and the means to counteract them. In no equal preceding period had military hygiene made greater strides than in the latter half of the nineteenth century; and yet, at the conclusion of the Spanish-American War, what was the verdict of history? Listen to the then Secretary of War: . . . "During the war, typhoid fever occurred in every camp in the United States; typhoid fever became epidemic in every camp, state or national; more than 90 per cent. of the volunteer regiments developed this disease within eight weeks after their enrollment, and the deaths from this camp scourge alone amounted to more than 80 per cent. of the total deaths from disease. With this statement of facts the question arises. What was the cause? The answer is simple and of easy demonstration. Generally described, the cause of the sickness was *camp pollution;* specifically, the cause was due to ignorance or neglect on the part of officers coupled with the inexperience of the newly enlisted soldiers." . . . And again: "The

evidence is overwhelming that the sickness among the soldiers encamped in the United States during the summer of 1898 was the result of *ignorance*, *inexperience* and *carelessness* on the part of both officers and men. The fact that typhoid fever was prevalent in every camp, whether of 1000 or 50,000 men, indicates what other indisputable evidence conclusively demonstrates."

It did not need the war with Spain to demonstrate the fact that a clean camp and the observance of a few common-sense, hygienic laws, will prevent much sickness, but it does seem to have needed the war with Spain and the experience of camp life gained therein, to demonstrate to the officers of the line of the army that upon their shoulders *finally* rested the grave responsibility of preserving the health of their men.

With an efficient and accomplished Medical Department and an efficient and well-equipped Hospital Corps it will seem to the outsider that this is too broad a statement to be true; but to those who know and understand the peculiar status as regards control and command that hampers the Medical Department in preventing preventable diseases, the truth of the assertion is only too real.

Of what avail are the recommendations and injunctions of a medical adviser for preserving the health of an army in the field if those recommendations and injunctions be set aside by the military commander, or if they be merely perfunctorily issued in orders and not strictly enforced in spirit and to the letter? Look over the records of the Medical Department of Army, Corps, Division and Brigade Headquarters in the United States, in Cuba, in Porto Rico, in China, in the Philippine Islands, and you will find that the recommendations made and the suggestions given to the commanders of troops by officers of the Medical Department, U. S. Army, from the surgeon-general down, were in the forefront of scientific research and advance made by medicine and military hygiene.

The principles of our military system are firmly established, and they limit the medical officer's duty to *advice* for the prevention of disease, but *control* when the sick man is actually present in hospital. Even in the latter case, commanding officers have been known to interfere with the surgeon's prerogative, yet the principle of non-interference is so well established that we can consider it as fixed. *Advice*, when it is a

question of military hygiene; and *control*, when it is a question of medicine.

But, hygiene is greater than medicine—it is better and *easier* to avoid injury to our priceless possession, health, than it is to cure disease.

What is it that has brought down the death rate in our cities to nineteen and even eighteen per thousand? *The sanitary precautions* taken by the medical profession and enforced by the civil authorities. Just imagine what would be the conditions of New York City and the rate of mortality amongst its 3,500,000 inhabitants if there did not exist the almost perfect sewerage and water systems!

The greatest work of the Americans in Cuba is to have brought down the annual death rate from thirty-four to twenty-one per thousand, thereby saving to the city of Havana alone, 40,000 lives annually. How was this accomplished? *By the sanitary precautions* taken by the medical profession of the army and enforced by the military authorities.

The Germans are admitted to be the greatest sanitarians in the world. For the thirty years preceding 1900 they had 13,000 deaths, whereas the French, in the same time, had 99,000 deaths. On the German side in the Franco-German War, the deaths from disease were as one to two from wounds, the only record of its kind in the history of the world. In the German Army and nation vaccination is compulsory; by this simple measure not a single case of small pox occurred amongst the German troops, whereas there was a perfect epidemic amongst the French, who lost thousands from this cause alone. Again, typhoid fever, the greatest scourge of armies in camp, killed five or six Frenchmen to one German. What was the cause of this discrepancy between the mortality of the two armies?

The causes were several, but they all come under military hygiene. First, the poor sanitary surroundings of the French soldier; second, poor drinking water; third, over-crowded quarters; fourth, poor food; fifth, the fact that with a population of 38,000,000 France maintains as large a standing army as Germany with a population of 50,000,000, with the result that Germany can afford to select her recruits, rejecting the weak, the poorly developed and the infirm, whereas France must take *all*, and many of her soldiers, breaking down under

the strain, become proper propagating grounds for the development and spread of disease.

Yes—there is no doubt about it—everything proves that hygiene is greater than medicine; for while medicine cures hundreds, hygiene saves tens of thousands of lives. These are facts which will enable us to view, in their proper light, the principles that govern in our army: When it is a question of prescribing medicines and otherwise caring for the sick, we give the doctor full control and power to act; but when it becomes a broader question of military hygiene and the preservation of the health of the whole army, we take from the doctor control and reduce his rôle to that of adviser, leaving the final responsibility with the officer commanding the troops.

Woe to the line officer, one would think, who failed to carry out to the letter and in the spirit intended, the plain precepts of his medical adviser. Yet, does one ever hear of a line officer's being tried for tolerating camp pollution and for making not only possible, but absolutely certain, the deaths of from three to ten men from disease—preventable disease—to one from bullets?

Is it not remarkable that, in spite of the experience of the Civil War, in spite of the experience of the Spanish-American War, in spite of the experience of every war and every campaign fought and conducted since the dawn of history—is it not remarkable that there should be no adequate provision for the systematic instruction and training of the line officer in this, the most important of his duties—the preservation of the health of his command? We repeat the maxim of Napoleon, that keen observer, based upon his own wars and those of Alexander, Hannibal, Cæsar, Gustavus Adolphus, Turenne Eugene, and Frederick: "Health is indispensable in war and cannot be replaced by anything." A maxim that every military student has probably seen, possibly committed to memory, but which he will seldom put into practice until the decimation of his own or some other command teaches him to appreciate its value. Why do we permit history to repeat itself to the disgraceful extent that occurred in the Spanish-American War, one dead in battle to seven and one-half from disease? Why do we remain blind to the remedy? The Medical Department of the United States Army would be only too glad to assume the full responsibility, not only for the cure but also for the prevention of preventable disease; since custom and usage has,

however, prohibited this to them, let us hasten to see to it that the line officer of the army, in whom we have reposed the final responsibility, shall, by education and experience, prepare himself to meet properly that serious responsibility.

Ignorance, inexperience and carelessness, were the causes of the spread of preventable disease during the Spanish-American War.

If line officers and enlisted men had an abiding faith in the recommendations, suggestions and injunctions of medical officers, nothing more would be necessary than for the doctor's directions to be formally promulgated in orders to the troops. But the sad story of preventable disease in war shows that until reinforced by the grim reaper, death, promulgated prophylactic measures are in the main treated lightly, if not with contempt, by those whom they are intended to benefit—not only by the enlisted men, but frequently on the part of subordinate commissioned officers, and sometimes, we regret to say, by commanding officers themselves.

What is the remedy? Discipline? Discipline is a great remedy for carelessness, and is of great effect when the malefactor is caught, but in nine cases out of ten, when the malefactor is caught the damage has already been done, not only to himself, which would be bad enough, but also to his comrades, which, since it affects the efficiency of the command, makes the case very grave. A remedy that requires the constant exercise of disciplinary measures is sometimes the only one to apply with careless or vicious men, but it is a remedy that to be successful, must be coupled with individual moral discipline and responsibility, and this means education and instruction. The sovereign remedy is the *education* of officers and men in common sense hygienic principles; their *instruction* in the application of these principles to the conditions of military life in the field, and the *experience* of all concerned by actual living in the field under service conditions. Discipline will partly remedy carelessness and viciousness, but only by education, instruction and experience can we hope to establish individual moral responsibility and eliminate ignorance and inexperience. Until we do this, and until every other army in the world does likewise, history will repeat itself, and three to ten deaths from preventable disease will remain the constantly recurring curse of army life in warfare.

After the experiences of the summer and fall of 1898 in our

numerous camps; after the disgraceful record we made from May 1st to September 30th, 345 officers and men dead of bullets to 2565 dead of disease, mainly preventable disease; after the thorough arousing of the country, and of the officers and men of the army to the necessity for living in camp in conformity to hygienic principles as enunciated by our doctors, have we anything to show as a beneficial result of discipline, education, instruction, and experience? Have we anything to show the truth of our statement concerning the means to adopt, in order to eradicate in camp life death from preventable disease?

We quote only one instance. A camp was established in Cuba and lasted from January to June, 1899. Six regiments, four volunteer and two regular, were encamped therein; two volunteer regiments for two months, two volunteer regiments for four months, two regular regiments for four and five months. In all that time, almost six months, *and in Cuba, there was only one death and that by drowning.*

Of what avail is it to a commanding general in the field if he have a perfectly organized staff, sufficient food of good quality, ample and suitable clothing and transportation, a liberal supply of ammunition, perfect armament, great numbers, fine *esprit de corps*—of what avail are all these if his army be flat on its back from preventable disease? With every possible element in its favor except the element of good health, that command is doomed.

"No man," says Lord Wolseley, "can be a truly great general who is ignorant of the great laws upon which sanitary science is based." We would, with His Lordship's permission, extend this conclusion and say: "No lieutenant can be a truly efficient lieutenant, no captain a truly efficient captain, no major, lieutenant-colonel nor colonel, a truly efficient field officer, no general a truly great general, who is ignorant of the laws upon which sanitary science is based or who is ignorant of the principles underlying military hygiene." Sanitation ,it will be recalled, is that subdivision of hygiene which prevents the transmission of pathogenic germs—germs that cause diseases from without—infectious diseases—preventable diseases, whereas military hygiene deals with all measures that tend to preserve and improve the health of troops, and includes such subjects as recruiting, clothing, food, drink, marching, camping, habitations, water, sewerage, etc.

We venture to say that the proportion of field and general officers in our army, outside of the Medical Corps, before the outbreak of the war with Spain, who understood the great laws upon which sanitary science is based and who understood the application of the principles underlying military hygiene, was infinitesimally small; their education in that respect while they were lieutenants and captains had been woefully neglected. What a ghastly smile must light up the features of those lieutenants and captains who, in 1898, and the three following years, had the good fortune to hold field officers' commissions in the volunteers! What a ghastly smile when they look back upon the responsibility that they assumed, and the lack of education, instruction and experience in camp sanitation and care of the health of men in the field that they brought with them to fulfil the responsibility!

We believe we have said enough to show that since to the general and to the line officer belongs the final responsibility for keeping an army off its back from preventable disease, the subject of military hygiene should form part of the education and instruction of all officers placed in command of troops, and it should form one of the subjects for examination in the promotion of all line officers in increasing and broader scope as the grade of the officer increases.

Those officers of the army who come from West Point, and the officers of the navy who come from Annapolis, should be taught the great laws of sanitary science and the principles of military hygiene before they graduate. After leaving the National academies they should be instructed in the practical application of those laws and principles to the peculiar conditions surrounding the soldier and the sailor in peace and war; and finally, this practical application should be supplemented by actual experience with troops in the field and aboard ship, under conditions approaching as nearly as possible those of actual warfare. How best shall the study of military hygiene be enforced in our military and naval schools?

Our military and naval schools consist: First, undergraduate schools; second, postgraduate schools.

The undergraduate schools comprise: First, the United States Military Academy at West Point and the United States Naval Academy at Annapolis; second, those educational institutions within the meaning of Section 1225, Revised Statutes and of the acts amendatory thereof, to which officers of the

army and navy to the number of 110, may be detailed as professors of military science and tactics; third, State schools giving military education and training, but not comprised in second.

The post graduate schools comprise: First, the Garrison School for Officers; second, the special service schools; third, the Staff College; fourth, the Army War College and the Navy War College. The special service schools comprise: (*a*) the Infantry and Cavalry School at Fort Leavenworth, Kansas; (*b*) the School of Application for Cavalry and Field Artillery at Fort Riley, Kansas; (*c*) the Artillery School at Fortress Monroe, Virginia; (*d*) the Engineer School at Washington Barracks, D. C.; (*e*) the School of Submarine Defense, Fort Totten, N. Y.; (*f*) the Army Medical School and the Navy Medical School at Washington, D. C.; (*g*) the Signal School at Fort Leavenworth, Kansas.

THE UNITED STATES MILITARY ACADEMY AT WEST POINT.

Candidates for admission to the Military Academy must be able to pass a satisfactory examination in the general principles of physiology and hygiene, with special reference to the nature and the effects of alcoholic drinks and other narcotics upon the human system.

A course of five lessons in Tracy's "Anatomy, Physiology, and Hygiene," is given to the second class as a part of the course in chemistry, mineralogy and geology.

Paragraph 66, Regulations United States Military Academy, 1902, says: "Military hygiene: The second class shall receive instruction by lecture in this branch during the months of April and May, according to arrangement in drawing."

Paragraph 45, says: "Allotment of time: Lectures on military hygiene 2-3 P. M. Half of the second class every week day during the months of April and May, and alternating with drawing."

These two paragraphs of the United States Military Academy Regulations, mean that during the months of April and May, cadets of the second class attend *about* twenty lectures of one hour each, in military hygiene. These lectures are delivered by the surgeon to one-half of the class one day and the same lecture to the other half on the following day. (Appendix "A" shows the scope of these lectures given in April and May, 1904.)

The cadets are not required to take notes, nor are they marked, nor does the subject count for anything on graduation standing; they simply sit there and listen attentively to the interesting talks given them on the various subjects selected by the surgeon, who, in order to stimulate the cadets to pay attention, questions a few of them at the next lecture on the subject-matter of the preceding lecture. By their answers some cadets show they have learned something, others show that they did not pay attention to the lecturer, or had already forgotten the main points of the subject.

We have given this résumé to show the present status of instruction in military hygiene at West Point, and to enable the reader to understand how we would *enforce the proper study* of this subject at the Military Academy. There seems to be a misapprehension, even on the part of some in authority, as to who has the power to prescribe a course of study at West Point; the practice is, however, perfectly plain on the subject. We quote from Davis's "Military Law of the United States," page 554, footnote: "The course of study at the Military Academy is fixed, in part by the statutes creating the several departments of instruction, and other enactments of Congress, and in part by executive regulation." This is important since it shows definitely the only ways that the study of military hygiene can be enforced at West Point. Let us look at these *ways* a little more closely.

1. By the statutes creating the several departments: The offices of Professor of Civil and Military Engineering, of Professor of Natural and Experimental Philosophy, of Professor of Mathematics, of Professor of Chemistry, Mineralogy and Geology, of Professor of Law, and of Instructor of Practical Military Engineering, were all established *directly* by acts of Congress at varying intervals of time from 1802-1874.

2. By other enactments of Congress: Secs. 1, 2, Act of May 20, 1886 (24 Stat. L., 69), prescribe the present study of "the nature of alcoholic drinks and narcotics and special instruction as to their effects upon the human system." (See Appendix "B.")

3. By executive regulation or order later confirmed by act of Congress: The office of Teacher of Drawing, first created by executive order, received statutory recognition in Sec. 2, of Act of April 29, 1802; the office of Professor of Drawing was established by Sec. 3, Act of August 8, 1846. The office of

teacher of French, first established by executive regulation, received statutory recognition in Sec. 2, of the Act of April 29, 1802. This office became, in 1846, by act of Congress, that of Professor of French, and later, in 1879, by Act of Congress again, it became the office of Professor of Modern Languages.

4. *By Executive Regulation alone:* The office of Instructor of Ordnance and Gunnery was established by *the Secretary of War* on the recommendation of the Academic Board, on December 31, 1856.

The practice of over 100 years shows us, then, that in order to enforce a new study at West Point, there must be a direct Act of Congress establishing it, *or* an executive order or regulation establishing it. In other words, Congress must act *or* the President, through the Secretary of War, must act.

If the Secretary of War (acting, of course, for the President) has the power to establish a new course of study at West Point, there is no necessity for having recourse to Congress to have such a new course of study established by special act. We know and we have shown that the President has this power, and that on three separate and distinct occasions in the history of West Point, he has exercised this power to establish a new course of study, viz.: in the cases of the departments of Drawing, French, Ordnance, and Gunnery.

Therefore, to best enforce the study of military hygiene at West Point, the Secretary of War, acting for the President, should establish, *by executive regulation*, the office of "Instructor of Military Hygiene;" he should direct the Academic Board to set aside such time, to recommend such text-book and such number or relative weight for graduation standard, and to make such other recommendations as will enable the second lieutenants coming from West Point to be thoroughly grounded in the great laws of sanitary science and in the general principles of military hygiene.

The course of study must be conducted in the same spirit with which the other courses of study are conducted at West Point. The cadet must be marked for his work, for, with few exceptions, cadets do not apply themselves thoroughly unless they are marked for their work, and unless that mark will have some weight in determining their graduation standing. Failure to attain proficiency (two out of a maximum of three) should subject the cadet to the same penalties as in the case of other studies, viz.: re-examination after a certain interval

of time with loss of numbers, turning back to succeeding class, dismissal from the Academy. These are the ways, the best ways, the *only* ways to enforce the study of military hygiene at West Point.

It must be a course not merely of lectures but of recitations as well; there must be an "Instructor of Military Hygiene" who should be a member of the Academic Board so that he may properly present and look after the interests of his department. The chair of Military Hygiene should be filled by detail every four years and it may well be occupied by the senior surgeon of the post of West Point, who should be left there on duty that length of time.

The War Department is already convinced of the urgent necessity for imparting this instruction to the undergraduate cadets. This conviction was superinduced by the influence of the former surgeon-general, whose representations were powerfully reinforced by the terrible effects that ignorance, carelessness and lack of experience, on the part of officers and enlisted men, had caused in our camps of pollution during the Spanish-American War.

The influence of the surgeon-general in convincing the War Department of this great need of proper instruction in military hygiene, was much enhanced by the resolutions adopted by the American Medical Association representing the profession of the entire country. This Association, on June 7, 1899, unanimously recommended "that a professor of military hygiene be appointed at West Point to instruct the cadets in the principles of sanitation," and resolved that a committee be appointed to wait upon, and present this and other resolutions to the President of the United States for his favorable consideration.

The present Superintendent of the Military Academy, in 1895, stated to the Board of Visitors' Subcommittee on Discipline and Instruction: "I think that military hygiene is a very necessary course. Lectures on this subject were given in camp last year by medical officers of the post and will be given this year, to impress upon the cadets the necessity of military hygiene."

As a result of all these influences and recommendations, the *Secretary of War took the initiative* and authorized the institution of the present course of lectures in military hygiene and later, on March 1, 1904, he approved the resolution adopted by the Academic Board, recommending that Woodhull's "Military

Hygiene" be adopted *as a book of reference* for cadets of the second class who attend lectures on military hygiene.

The institution of this course of lectures is an advance over no instruction at all. Why has *the study* of military hygiene not been enforced in the same spirit that the other studies at West Point have been enforced? The answer is very simple. The course of studies *as at present arranged* at West Point, does not permit of any more *study time* being required of the cadets. They are already overworked.

If our recommendations are carried out, if the President, through his Secretary of War, directs the establishment of the course of study as we suggest, the Academic Board will find the necessary time *without adding to the study hours of the cadets*, just as they found the necessary time when they had to increase instruction in third class Spanish, when they had to provide for instruction in third class English, and later, when they had to provide for the course of lectures in military hygiene.

The standard of admission to the Military Academy has recently been considerably raised, but this fact has not yet been entirely made use of to eliminate part of the fourth class course, theretofore deemed necessary. If this were done, two hours a day every afternoon for four months from September to January of the fourth class year, would become available for instruction in something else—say, military hygiene. This time now, we consider practically thrown away, as the cadet is merely taken over the same ground that he has already had to show proficiency in when he passed his entrance examination! We might go into details for a much further gain of time, but we believe we have said enough to warrant the belief that the Academic Board, if directed by the Secretary of War can, and will, without detriment to the present high quality of work done at West Point, easily find the time for a course of study in military hygiene *without increasing the study time* required of the cadets.

The time is propitious for West Point to give its graduates a working basis to combat the deadliest of all enemies, disease; to give its graduates such a knowledge of sanitary science and of military hygiene, as will make them at all events the peers of civilian appointees and men from the ranks who may have had the benefit of a year at the Infantry and Cavalry School. The Secretary of War must act, for we do not think the Academic Board will, of its own initiative, recommend the

establishment of such a course of study. The Academic Board feels, we think, that such a course should be entirely a post-graduate course, given at the special service schools, and it fails to remember that very few of the graduates, especially those in the infantry and cavalry, ever have a chance to attend the courses at those schools.

THE UNITED STATES NAVAL ACADEMY AT ANNAPOLIS.

The surgeon in the navy like the surgeon in the army, in the important question of preserving the health of troops, is restricted to making recommendations and suggestions to his commanding officer; our remarks, therefore, concerning the urgent necessity for the instruction of the line officer of the army in military hygiene, apply equally to the line officer of the navy; to him, by the customs of the service, belongs the final responsibility, and he must be educated up to his duties. The graduate of the Naval Academy must be thoroughly grounded at Annapolis in the great laws of sanitation and in the principles of hygiene, *both* as applicable to the peculiar conditions surrounding the life of the sailor.

There are no requirements in hygiene for admission to the the Naval Academy, nor is there at present any instruction in military hygiene at that institution. A course of lectures is given in physiology and hygiene in the second term of the fourth class year, and a written examination is held at the end of the year. A maximum multiple of four in a total of eighty is assigned to the study. The scope of the lectures has varied widely in the past eighteen years. At times, the lectures have been valuable as giving instructions in first aid to the wounded. At others, they have been more theoretical. Instruction seems to depend on the fancy of the lecturer.

The Secretary of the Navy has full control over the curriculum at the Naval Academy, although, of course, Congress can by enactment, prescribe a course of study, and has by enactment, done so. (See 24 Stat. L., 69.—Act of Congress of May 20, 1886.—Appendix "B.")

To best enforce the study of military hygiene at the Naval Academy, the Secretary of the Navy should establish the office of "Instructor of Military Hygiene," to be filled by the senior medical officer on duty at Annapolis, who thus becomes a member of the Academic Board; he should direct the Academic

Board of the Naval Academy to set aside such time, to recommend such text-book and such number or relative weight for graduation standard and to make such other recommendations as will enable the midshipman coming from Annapolis to be thoroughly grounded in the great laws of sanitary science and in the general principles of military hygiene.

The remarks we made about the course in military hygiene at West Point apply equally well to the course at Annapolis; it must be conducted in the same spirit in which the other courses of study are conducted; there must be a text-book, recitations, markings, a graduation standard, and penalties for failure to attain proficiency.

By thus teaching military hygiene at the Naval Academy, all the officers of the navy that will be entrusted with *command* are reached, and a good foundation in that important branch is assured them. By insisting on an examination in that subject for promotion to the different grades; increasing in importance with the grade, study in military hygiene commensurate with increased command and responsibility is enforced.

To best enforce the study of military hygiene at our two national academies, the War Department and the Navy Department must take the lead and prescribe the course of study as we have recommended. The universal history of war, the professional opinions of medical men in the services throughout the United States, the welfare of the rank and file in both army and navy, the greater benefit to the country from its defenders in peace and war, all demand that the line officers of our forces ashore and afloat shall be educated to meet those duties and responsibilities which, in the preservation of the health of the enlisted men, the customs of the service have imposed upon them.

OTHER UNDERGRADUATE SCHOOLS.

We shall now take up our second subdivision of undergraduate schools, viz.: those educational institutions within the meaning of Section 1225, Revised Statutes and of the acts amendatory thereof, to which officers of the army and navy to the number of 110 may be detailed as professors of military science and tactics.

General orders No. 65, issued by the War Department, April 6, 1904, subdivides these institutions so far as the detail

of army officers (100) is concerned into the following three classes:

Class A. All schools to which officers of the army, active or retired, may be detailed under the provisions of existing law, except schools of the second and third classes.

Class B. Agricultural schools established under the provisions of the Act of Congress of July 2, 1862, and which are required by said act to include military tactics in their curriculum.

Class C. Military schools or colleges, *i. e.*, those whose organization is essentially military and one of whose primary objects is the acquisition of a high degree of military drill and discipline.

Appendix "C," shows the apportionment of details at colleges, universities, etc., under Section 1225, Revised Statutes, and the amendments thereof, based upon the number of officers of the army available for such details (100).

Appendix "D," shows the eighty universities, colleges, etc. (August 20, 1904), having officers of the army detailed as professors of military science, etc., aad the classes A, B and C, to which they belong. It also shows the forty-six institutions which grade the military department equally with other departments, and make proficiency therein a requisite for securing a diploma.

At every institution of Class A, * * * at which a professor of military science and tactics is detailed, there shall be allowed a minimum of four hours each week during each school term to the department of military science and tactics; at every institution of Class B, there shall be allowed a minimum of five hours; and at every institution of Class C, there shall be allowed a minimum of six hours. This time shall be occupied as the professor of military science and tactics, in view of the hereinafter prescribed curriculum and such instructions as he may from time to time receive from the War Department, may deem best. (General Orders 65.)

The minimum course of military instruction, practical, and theoretical, at these schools in hygiene and first aid is as follows:

1. (*a*) Practical: Instruction in First Aid to the Injured. (*b*) Theoretical; One lecture on Camps and Camp Hygiene.

2. Class B. (*a*) Practical: Same as for Class A. (*b*)

Theoretical: Same as for Class A, and in addition, at least one lecture on camps and camp hygiene.

3. Class C. Same as Class B.

The military department of each institution is subject to inspection under the authority of the President of the United States; and the reports of these regular inspections must be submitted to the General Staff of the army for its critical examination, and the Chief of Staff reports to the Secretary of War, from the institutions which have maintained a high standard, the six whose students have exhibited the greatest application and proficiency in military training and knowledge.

The President of the United States has authorized the announcement that an appointment in the Regular Army (subject to examination and other requirements, as in case of candidates from civil life) will be awarded annually to an honor graduate of each of the six institutions thus designated, provided that sufficient vacancies exist after the appointment of graduates of the Military Academy at West Point, and the successful competitors in the annual examination of enlisted men. By the term, "honor graduate," is understood "a graduate whose attainments in scholarship have been so marked as to receive the approbation of the president of the school or college, and whose proficiency in military training and knowledge and intelligent attention to duty, have merited the approbation of the professor of military science and tactics."

In every one of these eighty institutions the faculty has given proof of its intention and ability to comply with the regulations prescribed by the War Department and has shown that it is cordially in favor of such military instruction.

Bearing in mind that no detail of professor of military science and tactics is made at any institution which does not guarantee to maintain at least 100 pupils under military instruction, we see that there are at present *at least* 8000 pupils, and that when all the details are made then there will be at least 10,000 pupils *under military instruction* controlled by *the War Department.*

Who are these pupils? They are young men in every State of the Union, who, in the natural course of events, by virtue of their military education and training may go into the organized militia in time of peace, and who, in time of war, should be considered by the State and the National authorities

as proper young men to be given commissions in the volunteer forces.

By enforcing the study of military hygiene in all these educational institutions, we give a knowledge in this important subject to thousands of pupils with military ambition. In whatever military capacity they may hereafter serve, this knowledge on their part cannot fail to have great effect upon the prevention of preventable disease among their fellow soldiers.

The War Department appreciates the necessity for such instruction, and, as we have seen, has already taken the initiative.

To best enforce the study of military hygiene in these educational institutions, the War Department should prescribe the study of an elementary text-book on military hygiene. It has made its own precedent for this action by prescribing in institutions in Class C, the study of an elementary text-book on the Art of War. Recitations in military hygiene should be required at least one hour each week during the last term of the last school year. These recitations can well be held by the professor of military science and tactics. In addition, however, a medical officer, detailed for that purpose from the nearest post or station, should be required to deliver several lectures on military hygiene, the students being required to take notes and the subject of the lectures being made the basis of subsequent recitations.

An elementary text-book on military hygiene for use in these educational institutions has yet to be written. All that is wanted is to point out clearly the dangers to which the soldier is exposed, and how they are to be met.

The excellent "Notes on Military Hygiene," by Col. Alfred Woodhull, A.M., M.D., LL.D., U. S. Army, retired, can well be used as a book of reference in those institutions, and form the basis of lectures to be delivered by medical officers.

Much depends upon the professor of military science and tactics. Whether he be selected from the active or the retired list, his qualifications to fill the position with credit to the service should be the first consideration; he should be able to enforce the study of military hygiene in accordance with the requirements.

Much depends upon the medical officer detailed to serve on the General Staff. As a member of the Second Section, First

Division, he could well be placed in supervisory charge of instruction of military hygiene and first aid. By keeping in touch with the surgeon-general on the one hand, and with these educational institutions on the other, he should be able to evolve such a systematic scheme of instruction, as would thoroughly cover the ground and as would commend itself to the approval of the chief of staff and of the Secretary of War.

Over the military curriculum in civil institutions other than those at which army officers are detailed, the War Department has, of course, no jurisdiction; yet it is evident that the study ot military hygiene should be encouraged in them all.

The War Department having taken the initiative, as we recommended, by enforcing this study in our national academies and in the civil educational institutions comprised in Classes A, B, and C, will then be in a position to recommend to the State military authorities "that the study of military hygiene be enforced in all the other State military and naval schools." It should, through its annual authorized inspections of the organized militia, keep in touch with progress made in this subject at these schools; it should recommend an elementary text-book and a course of study, and it should, upon request of the school and state authorities send medical officers of the army to deliver lectures during the school year, as may be necessary.

In spite of the deplorable losses from preventable disease amongst the volunteer troops during the last war, it is too much to hope for an enlightened public opinion sufficient to move State legislators in even one State, much less in all the States, to pass laws enforcing the study of military hygiene in State institutions of learning that claim to give military education and training; it is too much to hope that there will ever arise, in the medical profession or out of it, an earnest body of persistent and zealous workers, who will do for military hygiene what the ladies of the W. C. T. U. accomplished for their own specialty. The statutes quoted in Appendix "B" are a monument to those ladies' zeal and industry. Would that we had two such statutes enforcing the study of military hygiene in all our military and naval schools, State and National: And having two such statutes, would that they might be complied with in the spirit that the history of preventable disease in war has inculcated in the minds of our Army Medical Corps:

POSTGRADUATE SCHOOLS.

We now come to a consideration of the postgraduate schools. General Orders 115, current series of the War Departments, prescribes that at each military post there shall be a garrison school for the instruction of officers in subjects pertaining to the performance of their ordinary duties. Systematic recitations are required of the second and first lieutenants and captains of less than ten years' service. In the third year, in the infantry, cavalry and coast artillery, ten hours out of the yearly total of 150 are to be devoted to recitations in the theory of military hygiene; in the field artillery, fifteen hours are assigned, and in the engineers, the officer is supposed to pass a satisfactory examination in military hygiene before entering on the school course. The post surgeon at all garrison schools is instructor in military hygiene.

The general staff deserves great credit for giving us in this order our first co-ordinate scheme of military education. As far as military hygiene is concerned, the order is merely a beginning, but it shows a hearkening to the voice of history and to the advice of the medical corps that will bear the best of fruit in the future by enforcing now upon our younger officers, the study of this vital subject. This order wisely provides a means of effecting changes in the course by requiring division commanders to satisfy themselves through careful inspections by officers of their staff, that the instruction in these garrison schools is zealously and efficiently conducted, and to recommend such changes as may be needed to secure the highest possible efficiency.

We shall call attention to only one point. In the second year, fifty recitation hours are devoted to international law and fifty more recitation hours to military law. International law is a subject certainly that officers should be familiar with, yet the opportunity for the exercise of that knowledge may never arise during an officer's entire career; whereas a knowledge of military hygiene he will find occasion to use *every day* of his service with troops. Military law, at the War Academy, Berlin, receives one hour out of twenty-five weekly hours in Class II, *and so does military hygiene*, but the Germans, as we remarked before, are the greatest sanitarians in the world, which would naturally account for their deeming knowledge in that subject as important as a knowledge of military law.

Here is the opportunity of the Medical Corps to properly enforce the study of military hygiene. It will soon be apparent that the time set aside is sufficient to give to the line officer only a rudimentary knowledge of the subject and, until the course is extended, numerous lectures will have to supplement the course of studies and recitations.

By earnest work, zealous efforts and wise recommendations on the part of the post surgeons, the surgeon-general, through the Army War College and the Chief of Staff, should be able to have the study of military hygiene extended, not merely by an increase in the number of recitations and a supplementary course of lectures, but also by an enforcement upon the senior officers of a study of this same subject commensurate with their greater rank and more serious responsibility in the preservation of the health of their command.

First and foremost in the list of postgraduate schools stands the Infantry and Cavalry School at Fort Leavenworth, Kansas. It has attained this distinguished position by virtue of the enlightened efforts of its staffs of instructors and of its commandants. The object now of the Infantry and Cavalry School is to instruct "selected officers of the infantry and cavalry in the duties of these arms in war and in the general military knowledge needed for the proper exercise of the higher grades of command." It has five departments of instruction and one of them is the department of military sanitation and hygiene. It is the only special service school where military hygiene is taught at all, and the only school in the army where it is taught with the dignity the subject deserves.

General Orders 1 of this year gives the subject a maximum value of 50 out of a possible 100. General orders 115 prescribes that the instruction will hereafter consist "of lectures amplifying the subject as taught in the garrison schools, and practical exercises in sanitary inspections and reports covering habitations, drainage and sewerage, clothing and personal habits of the men; water, food and cooking; police and disposal of wastes, etc." Proficiency in all subjects is made a condition, of course, to receiving a diploma; but for failure, in our opinion, a sufficient penalty is not prescribed. An officer failing to pass a satisfactory reexamination after a year's study of military hygiene, should be dropped from the rolls of the army; it is better to penalize the officer than perhaps later to fill our graveyards with innocent victims. An officer of this

kind will not much mind being relieved from the school, being returned to his regiment, and having made in his case a special report to the War Department. A suitable reward for success and a suitable penalty for failure go hand in hand with the proper enforcement of study in our military schools.

The same course of study in military sanitation and hygiene now taught at the Infantry and Cavalry School, should be enforced at the Artillery School at Fortress Monroe and at the School of Application for Cavalry and Field Artillery at Fort Riley. The main object of both these latter schools is to give to cavalry and artillery officers more advanced instruction in the active duties of their respective arm of service than they can acquire at the ordinary post. This is exactly what the Infantry and Cavalry School does for the selected infantry and cavalry officers and it is exactly such an advance over instruction in the garrison schools that is given by the department of military sanitation and hygiene at Leavenworth.

To bring about this enforcement at these two schools it will be necessary to convince the permanent *personnel* of the Army War College and the Chief of Staff of its absolute necessity therein, either directly through the surgeon-general and the medical officer on duty with the general staff, or indirectly through the intelligent and enlightened action and recommendation of the commandants and staffs at those special service schools. In the latter case, much will depend upon the army surgeons on duty at those stations; the methods pursued at Leavenworth, in bringing about action can well be imitated by them. The time has come for giving officers of all arms such a knowledge of military hygiene as will reduce the deaths from disease to the same ratio as the deaths from bullets—the deaths from disease being due entirely to such unavoidable causes as exposure, climate and severity of campaign. All methods that will tend toward that end should be invoked, and therefore, efforts to institute advanced courses in military hygiene at Fortress Monroe and at Fort Riley, should be incessant.

It has been an axiom with all great commanders to take the best possible care of their fighting men in every way, especially, however, in the preservation of their health; then, when military necessity became paramount, to sacrifice unhesitatingly this most valuable consideration in order to attain the object of the campaign or war.

Military administration in time of peace and strategy in time of war, demand careful investigation of the inter-relation of these two controlling elements. We have no school where the line officer can study the influences of health and disease on administration and strategy—yet these are the very subjects that general staff officers will have to consider. We recommend such an advanced course at the new Staff College founded by General Orders 115, at Fort Leavenworth, where our specially selected officers of engineers, cavalry, artillery and infantry are to be instructed in the duties of general staff officers in time of war, and where are to be made such recommendations as may concern the practical efficiency of the several arms of the service in war.

Finally, at the Army War College, the keystone of our educational arch, and at the Navy War College, should be carefully considered the practical application of all knowledge of military hygiene in the regulation and conduct of army manevuers and those conducted jointly with the navy. By both these colleges should also be carefully prepared critical analyses of the military hygienic system of foreign armies, and the publication of such knowledge for the benefit of the military profession.

The *system* of education as promulgated is well nigh perfect in conception; some of the details are naturally capable of improvement, but we feel that if the necessity therefor be clearly shown, none will be readier to incorporate good suggestions than the officer of the *personnel* of the War College, and none will be readier to adopt them than the general staff, which, in everything it has undertaken thus far, has shown itself to have at heart the very best interests of the service.

HOW BEST TO PROMOTE INTELLIGENT PRACTICE.

We now take up the second subdivision of our theme: How best to promote the intelligent practice of military hygiene in our army.

1. If the Medical Corps of the army succeeded in securing and retaining the best young doctors obtainable from civil life, and if, after entry into the corps, these doctors were made so to devote themselves to study and practice as to become, and to show that they were, experts in military sanitary and hygiene matters.

2. If the line officers from the second lieutenant to the general were properly and systematically educated, instructed and trained to meet their responsibilities in preserving the health of the men and were made to show, in their examinations for promotion, to include colonels, that in both theory and practice they understood and could apply this most important part of their duty.

3. If the enlisted men were, by instruction and training and discipline, imbued with a due sense of responsibility in the part they must play in order to preserve their own health and the health of their comrades.

4. If, in the purchase, expenditure and accounting of material and supplies to be used in experimental, instructive and practical purposes of demonstration of military discipline and military hygiene, in post, camp and on the maneuver field, the War Department were liberal and generous and insisted upon all subordinates taking into consideration only the welfare of the command and the preservation of health.

5. If, finally, in our field maneuvers—departmental, divisional and army—the War Department, the Army War College and the commanding generals, were to devote proper attention to fully developing the opportunities presented of putting into actual use, under conditions approximating those of actual war, all that has been learned and practiced in school and post, by enlisted man, line officer and medical officer. If all these *ifs* we have mentioned were accomplished facts, there would, in our opinion, be a vast improvement in the intelligent practice of military hygiene in our army. Let us examine these five points more in detail.

1. Although under the customs and usages of the service in sanitary and hygienic matters as we have shown, the *final* responsibility in preserving the health of the army rests with the line officer, yet the medical officer is the one upon whose shoulders must be the *great* responsibility of making to his commanding officer the proper recommendations and suggestions to meet each particular set of conditions. He need not wait to be consulted, When he recognizes the need for his services, he must put himself on record in writing, and, to the utmost of his ability, consonant with his position, he must use his knowledge and training to carry out his sanitary and hygienic duties—the most important duties that by the regulations fall to his lot, in preserving the efficiency of the army.

The medical corps should be satisfied with the very best material only. It takes four years of unremitting toil to secure a degree in medicine and about two years of hospital practice to make the finished doctor; here are six years of very expensive education and training, costing pretty nearly $10,000. The successful physician, after establishing in practice, say, in New York, where competition is greatest, will easily earn, at the end of his first year's practice, the equivalent of a mounted captain's pay in the army; at the end of another year he will easily earn the equivalent of a major's pay; and in five years, our bright young practitioner will be earning the equivalent of a brigadier-general's salary.

Now that bright and successful doctor is the one you want to get into the army; what attractions are offered him by the medical corps? A first lieutenant's pay for the first five years, then a captain's pay for—no one knows exactly how long, and the probability now is that he will never get beyond a majority but will retire in that grade.

It is self-evident that Congress must come to the help of the medical corps and remove the demoralizing effects of the Act of February 2, 1901, so that the very best young civilian doctors will not sneer at the supposed advantage in joining the army but will seek to enter the corps, drawn by the prospects in pay and promotion opening before them, so that the trained doctors will not leave the service disgruntled, taking with them their training and knowledge into much more lucrative civilian practice.

Having secured a sufficient and regular supply of the best young physicians from civilian life, the medical corps should again be satisfied only with the hardest kind of enthusiastic work throughout all its grades.

The Army Medical School at Washington, D. C., plays a leading part in educating the officers of the corps in the duties of their profession. The most important subject taught at this school is military hygiene. Out of thirteen subjects, with a total maximum of 7000 and a total minimum of 4900, it receives a maximum of 800 and a minimum of 560.

It is a well-known fact that in civilian medical schools and colleges the subject of military hygiene is practically not taught at all; there are some exceptions, but the statement holds good that in nine out of ten schools, this subject is a closed book

to the student. Hence the importance of this study to the student candidate.

General Orders 115 fixes the system recently tried at the Army Medical School: student candidates, besides passing a preliminary examination must, after the eight months' course at the school, pass a final or qualifying examination before being given a commission. This is unquestionably for the best interests of the service.

If the medical corps is increased as justice and efficiency demand it to be, instruction at the Army Medical School can readily be extended to a greater number of medical officers than merely those doing duty in the vicinity of Washington, or who are on leave of absence, etc. Efficiency demands that they be given every opportunity in Washington and elsewhere to become properly acquainted with advances in their profession.

No stagnation in intellectual and practical work should be permitted in any grade. The major and the lieutenant-colonel should be made to show their fitness for promotion to the next higher grade.

Considering only the welfare of the army in time of war, it is to be hoped the doctor that has to be picked up haphazard, is a thing of the past. Many most excellent men rendered invaluable services, but many also were, through their ignorance of military administration, military hygiene and practice of medicine, worse than useless. We therefore heartily recommend the establishment of a medical reserve corps, such as that proposed by the surgeon-general, which, in addition to other advantages, will give the Medical Department a number of doctors outside the army to fall back upon at once, at the outbreak of hostilities.

We also recommend the discouragement, as much as possible by the War Department, of the use of political and other influence to secure positions in the army for doctors who have been failures in civil life—in time of war we want the very best the country affords, not the very worst. Many lips now mute, if they could be heard, would silence forever the clamors of the politician.

The greatest possible efficiency of the medical corps is an important consideration in promoting the intelligent practice of military hygiene and preserving the health of the army.

2. In our remarks on the necessity for the education of

the line officer in military hygiene, and on how best to enforce that study in our military and naval schools, we have stated our position on the education that should obtain in the army, not only of the second-lieutenant, but of all the line officers, not only in undergraduate schools, but in our garrison and special service schools, the Staff College, and the War College itself, we shall, therefore, not repeat what we said there but shall make a few supplementary observations from a practical standpoint.

Let the line officer read the remarkably complete and suggestive chapter, "Scheme for a Sanitary Inspection by Company Officers," pp 218-224. Woodhull's "Military Hygiene," then let him read the excellent chapter, pp. 185-217, "The Care of Troops in the Field," and he will get an idea of the complexity of the duty devolving upon him in preserving the health of his men; there is no one else who can perform this duty for him—his is the duty and the responsibility. He must meet both in the proper spirit.

In recruiting (on which the efficiency of the army in great part depends), in the care of the person, in camping, in marching, in ventilation, in the drinking water, in the preparation, cooking, and serving of food, in the care and cleanliness of the post or camp, in the proper exercise and the wholesome recreation of the men, the main responsibility rests on the line officer. He must meet that responsibility in the proper spirit.

The War Department keeps a watchful eye on the recruiting of the army, as the frequent circulars of admonition show, but who keeps a watchful eye on the multitudinous details that affect the health of the men? If the commanding officer required all his subordinates to devote the proper time to the practical part of supervising these important matters, there would be not only great improvement therein, but there would be acquired by the line officer *the habit* of dealing practically with sanitary and hygienic matters in the post, that he could readily apply in the field to the benefit of the health of his command.

We shall illustrate what we mean and in doing so, shall select the great and vital point in military hygiene—the teaching of the subject of preventable disease.

It is far more important for the line officer to know *how* preventable diseases are propagated than it is for him to know everything else about them; for when he knows *where* the

danger lies, guarding against that danger is merely to apply good, hard, common sense principles, which, as we pointed out in the beginning, have become our stock in trade by the sacrifice of untold lives.

The diseases of camp life and how they are propagated are all well known. The army of the United States at different times and in different places, has been in intimate contact with every one of them, and, as the need has arisen, the surgeon-general of the army and the chief surgeons of divisions and departments, have drawn up for promulgation, in orders by commanding generals, instructions concerning the propagation of those dread enemies and the measures to be taken to guard against them.

Take, for instance, Circular No. 62, from the Headquarters of the Army, series 1902, on "Personal Hygiene for the Prevention of Typhoid Fever in Camps," and General Orders No. 58, from Headquarters, Division of the Philippines, series 1902, on "Precautions Against Cholera." Here, in two nutshells, we have the subjects of cholera and typhoid fever and the duties imposed upon the line officer in preserving the health of his men when those scourges are present.

We recommend that the authorities at the Army Medical School compile and correct to date a series of actual general orders and circulars issued on the various preventable diseases, this compilation to be the standard text-book on preventable disease and issued to every officer, organization and school.

We recommend that once each month during the school year, the commanding officer, on the recommendation of the post surgeon, shall issue an order as follows: "Beginning with Monday, the — inst., it will be assumed that cholera (or some other camp scourge) has made its appearance at this post. The commanding officer of each organization will be held responsible that his men live in accordance with the requirements of General Orders ——, for the period of two (or other number) of days. The post surgeon is charged with the supervision of all details and will make, with the post commander, an inspection each morning of the organizations at which all officers, non-commissioned officers and men will be present."

During encampments and maneuvers the same methods should be pursued.

Practical demonstrations like this, of actual living under assumed cholera and other preventable disease conditions, are

what we need in the army, so that what the doctor says may not go into one ear and out at the other, as is too often the case; and if the details are properly carried out, the experience gained therein would be of the greatest value in *drilling* officers and men in guarding their health under the most dangerous circumstances.

3. What is it that has enabled the German Army to accomplish what in some armies is a practical failure? *Discipline.* It is necessary with enlisted men, not merely to devise a system of rules for the preservation of health, but to see also that those rules are enforced; therefore, a well-disciplined command is apt to be a healthy command, at all events, a healthier command than a poorly disciplined one. The great evil that all officers of the medical corps and of the line have to contend against with the enlisted men, is their ignorance or wilful violation of the most ordinary rules of health. *Public opinion* in the ranks must be educated to a higher plane in the important matter of military hygiene if we want to get good results.

No matter how many orders are issued, nor by whom issued, unless you can awaken a due sense of responsibility on the part of each and every man in the ranks, the good accomplished will never even approximate the good that should be done. The private soldier, now ignorant of many matters that pertain to his health, even the otherwise intelligent non-commissioned officer, will need many patient and practical demonstrations of the immense importance of individual co-operation. The Army Medical School should devise an elementary text-book, that will teach the simple rules of health to the enlisted men. Some book on the lines of "Sanitation and Health," by Maj.-Gen. Sir R. C. Hart, V.C., as revised by Col. T. H. Hendley, C.I.E., I.M.S., is what is needed. Such a book should be placed in the hands of each soldier. In addition, there must be heart to heart talks by the surgeon, impressing upon the men their individual responsibility in caring for their own health and necessarily, the health of their comrades, who might suffer by their wilful neglect. Then must come the discipline of the line officer to enforce, in necessary cases, all these precepts. *But* the work will not be complete, we repeat, unless there is developed, on the part of the enlisted men, an individuality and responsibility that go to the root of the evil—a moral responsibility—a discipline that follows the individual man, not only while under the eye of his commissioned and non-commissioned

superior—not only while in the presence of his comrades—but a discipline that stays with him away from his fellows, that follows him in the secrecy of his own actions, that keeps him from violating the rules prescribed for his ordinary guidance and for his extraordinary guidance in time of extreme peril, that keeps him from giving way to the temptation of the moment, whether it be a question of drinking unboiled water in typhoid fever districts, or eating fruit in cholera epidemics. A discipline of the highest type that controls him, not through fear of punishment, not entirely through fear of personal injury, but the strong moral safeguard that makes him abhor the thought of bringing disease and ill-health amongst his comrades, ruining his own and their lives, destroying the efficiency of the command, and possibly bringing disaster on his country!

The greatest good in practical care-taking will be done the men if the scheme we have proposed, of having the command in post, camp and on the maneuver field live at certain times under conditions of epidemic, be conscientiously carried out by all concerned. That will be the time to enforce instruction and discipline and develop in each individual soldier the moral responsibility we have mentioned.

4. Niggardliness in time of peace is always productive of waste in time of war. In everything that pertains to giving officers and men education, instruction, and training in guarding against and preventing the spread of preventable disease, no expense should be spared. In the practical work we have recommended necessary material and supplies, such as wire screening, lumber, nails, disinfectants of all kinds, means for destruction of fecal matter and refuse, sterilizers, dry earth closets, and a thousand and one other things by experience found necessary, should be approved on requisition, should be on hand for the period of practical work in post, camp and on the maneuver field, and should, whenever necessary, be freely used and expended.

It is to be hoped that such questions as "shall lime for disinfecting purposes be furnished by the Medical or by the Quartermaster's Department?" have been forever laid at rest; entirely too much paper work and entirely too little lime was the outcome. The broadest possible spirit is necessary. When health and efficiency are at stake and there is a question as to which department should act, *both* departments would do well

to purchase and supply, leaving the settlement of the controversy to other and more propitious occasions.

5. Slight advantage only has been taken of the army maneuvers to give to officers and men instruction in the practical application of the principles of military hygiene.

The permanent *personnel* of the Army War College who, under the Chief of Staff, are charged with the regulation and conduct of army maneuvers, should, in their annual scheme, include the practical application of the knowledge acquired in military hygiene during the year, by setting aside two days during which the whole command in the field should be required *to live* as though some preventable disease, some preventable camp scourge, like typhoid fever or cholera, had broken out.

The disease for each year should be announced long in advance. All troops should be required to come prepared, as far as possible, by study and instruction, and the Medical Department should arrange for its material and supplies to carry out its part of the practical work.

The first day, at a given hour, troops by order *will begin to live* as though the disease were imminent, it having made its appearance in a neighboring town frequented by the men. The second day, the disease will be assumed to have shown itself amongst the troops; isolation hospitals will be established; men by lot will be considered stricken; quarantine, detention, disinfection, and hospital service will all be carried out as in case of actual epidemic. The instruction should conclude at a certain hour; and, on the following day, the senior surgeon, taking the place of the chief umpire, might well discourse to the assembled officers, about the *mistakes made* and the lessons learned.

The problem is a very serious one and our experiences during the Spanish-American War show that it is deserving of our best thought and our most earnest efforts; the hearty cooperation of the medical officer, the line officer, and the enlisted man are necessary to successful solution.

We believe that the measures we have proposed will result in improving the intelligent practice of military hygiene in our army. No more serious study confronts the military student than how properly to preserve the health of troops. Nothing is more difficult to deal with than disease in war; and, to the conscientious officer, nothing is more horrible to contemplate than the suffering and death that not only can but should be prevented. "REQUIESCAT"—45.

APPENDIX "A"

COURSE OF LECTURES ON MILITARY HYGIENE DURING THE MONTHS OF APRIL AND MAY.

(2 *P. M. Every Alternate Day.*)

BY LIEUT-COLONEL V. HAVARD, MEDICAL DEPARTMENT, U.S.A.

1. Object and Scope of Military Hygiene. Statistics of Morbidity and Mortality in the Army.
2. Recruiting.
3. Exercise and Marching.
4. Water.
5. Food.
6. Military Ration.
7. Air.
8. Ventilation.
9. Heating and Lighting.
10. Clothing and Equipment.
11. Disposal of Excreta.
12. Sewage and Garbage.
13. Camps.
14. Posts, Barracks and Quarters.
15. Personal Hygiene.
16. Alcoholism and Venereal Diseases.
17. The Prevalent Diseases of the Soldier.
18. Malarial Fever and Yellow Fever.
19. Service in Hot and Cold Climates.
20. Inspection and Disinfection.

APPENDIX "B."

SECTION 1. "The nature of alcoholic drinks and narcotics, and special instruction as to their effects upon the human system, in connection with the several divisions of the subject of physiology and hygiene, shall be included in the branches of study taught in the common or public schools and in the military and naval schools, and shall be studied and taught as thoroughly and in the same manner as other like required branches are in said schools, by the use of text-books in the hands of pupils where other branches are thus studied in said schools, and by all pupils in all said schools throughout the Territories, in the military and naval academies of the United States, and in the District of Columbia, and in all Indian and colored schools in the Territories of the United States. Act of May 20, 1886. (24 Stat. L., 69.)

SEC. 2. It shall be the duty of the proper officers in control of any school described in the foregoing section to enforce the provisions of this act; and any such officer, school director, committee, superintendent or teacher who shall refuse or neglect to comply with the requirements of this act, or shall neglect or fail to make proper provisions for the instruction required and in the manner specified by the first section of this act, for all pupils in each and every school under his jurisdiction, shall be removed from office, and the vacancy filled as in other cases. Act of May 20, 1886. (24 Stat. L.)

APPENDIX "C."

Apportionment of details at colleges, universities, etc., under Sec. 1225, Revised Statutes, and the amendments thereof, based upon the number of officers of the army available for such details.



STATES	POPULATION OF STATES ARRANGED IN GROUPS CENSUS 1900	POPULATION OF GROUPS AND OF STATES NOT ARRANGED IN GROUPS CENSUS 1900	DETAILS FOR LAND-GRANT SCHOOLS	DETAILS BY POPULATION	TOTAL DETAILS DUE.
Maine	694,466		1	..	..
New Hampshire	411,588		1	..	..
Vermont	343,641	1,449,695	1	1	4
Massachusetts	.....	2,805,346	1	2	3
Rhode Island	428,556		1	..	..
Connecticut	908,420	1,336,976	1	1	3
New York	7,268,894		1	..	..
New Jersey	1,883,699	9,152,563	1	7	9
Pennsylvania	6,302,115		1	..	..
Delaware	184,735	6,486,850	1	5	7
Maryland	1,118,044		1	..	..
Dist. of Columbia	278,718	1,396,762	..	1	2
Virginia	1,854,184		1	..	..
West Virginia	957,800	2,812,984	1	2	4
North Carolina	.....	1,893,810	1	1	2
South Carolina	.....	1,340,316	1	1	2
Georgia	2,216,331		1	..	..
Florida	528,542	2,744,873	1	2	4
Alabama	.....	1,828,697	1	1	2
Mississippi	.....	1,551,270	1	1	2
Louisiana	.....	1,381,625	1	1	2
Arkansas	.....	1,311,564	1	1	2
Texas	3,048,710		1	..	..
Oklahoma	398,331		..	..	..
Indian Territory	392,060		..	..	..
New Mexico	195,310	4,034,411	..	3	4
Tennessee	2,020,616		1	..	..
Kentucky	2,147,174	4,167,790	1	3	5
Ohio	.....	4,157,545	1	3	4
Indiana	.....	2,516,462	1	2	3
Michigan	.....	2,420,982	1	2	3
Illinois	4,821,550		1	..	..
Wisconsin	2,069,042	6,890,592	1	5	7
Iowa	2,231,853		1	..	..
Missouri	3,106,665	5,338,518	1	4	6
Minnesota	1,751,394		1	..	..
North Dakota	319,146		1	..	..
South Dakota	401,570		1	..	..
Montana	243,329	2,715,439	1	2	6
Kansas	.....	1,470,495	1	1	2
Nebraska	1,066,300		1	..	..
Colorado	539,700	1,606,000	1	1	3
Alaska	63,592		..	..	..
Washington	518,103		1	..	..
Oregon	413,536		1	..	..
Idaho	161,772		1	..	..
Wyoming	92,531		1	..	..
Nevada	42,335		1	..	..
Utah	276,749		1	..	..
Arizona	122,931	1,691,549	..	1	7
California	1,485,053		1	..	..
Hawaii	154,001	1,639,054	..	1	2

APPENDIX "D."

80: 21 A; 39 B; 15 C; 5 Not Classified.

Universities, Colleges, Etc.

HAVING OFFICERS OF THE ARMY DETAILED AS PROFESSORS OF MILITARY SCIENCE, ETC.

(*Classes noted in left margin, except in cases of details without pay, from retired list. Schools having such details, not classified.*)

Arizona	A	University of Arizona, Tucson.	
Arkansas	B	University of Arkansas, Fayetville.	
	A	Ouachita College, Arkadelphia.	
California	B	University of California, Berkeley	x
	C	St. Matthews Military School, San Mateo.	
	C	Mount Tamalpais Military Academy, San Rafael	x
Connecticut	A	Yale University, New Haven	
Delaware	B	Delaware College, Newark.	x
Florida	B	University of Florida, Lake City. East Florida Seminary, Gainesville.	
Georgia	C	Georgia Military College, Milledgeville	x
	A	Gordon Institute, Barnesville	x
	B	North Georgia Agricultural College, Dahlonega, Ga	x
Idaho	B	University of Idaho, Moscow	x
Illinois	B	University of Illinois, Champaign	x
Indiana	C	Howe Military Academy, Lima	x
	B	Purdue University, Lafayette.	
Iowa	A	Simpson College, Indianola.	
	A	State University, Iowa City	x
Kansas	B	Kansas State Agricultural College, Manhattan.	
Kentucky	B	Agricultural and Mechanical College of Lexington.	
Louisiana	B	State University and Agricultural College, Baton Rouge	x
Maine	B	University of Maine, Orono	x
Maryland	A	St. John's College, Annapolis	x
	B	Maryland Agricultural College, College Park	x
Massachusetts	B	Massachusetts Agricultural College, Amherst	x
		Massachusetts Institute of Technology, Boston	x

Michigan	C	Michigan Military Academy, Orchard Lake	x
	B	Michigan Agricultural College, Lansing	x
Minnesota	A	Shattuck School, Faribault	x
	B	University of Minnesota, Minneapolis	x
Mississippi	B	Agricultural College (Mechanical Agricultural College	x
Missouri	C	Blees Military Academy, Macon.	
	A	St. Louis University, St. Louis.	
	C	Wentworth Military Academy, Lexington.	x
	C	Kemper Military School, Boonville	x
	B	University of Missouri, Columbia	x
Nebraska	B	University of Nebraska, Lincoln	x
Nevada	B	Nevada University, Reno	x
New Hampshire	B	New Hampshire College of Agricultural and Mechanical Arts, Durham	x
New Jersey	B	Rutgers College, New Brunswick	x
		Montclair Military Academy, Montclair.	
New Mexico	A	College of Agricultural and Mechanical Arts, Mesila Park.	
New York	A	College of St. Francis Xavier, New York City.	
	A	St. John's College, Fordham.	
	C	St. John's Military College, Manlius	x
	C	New York Military Academy, Cornwall-on-Hudson	x
	A	Riverside Military Academy, Poughkeepsie.	x
	B	Cornell University, Ithaca.	x
	A	De La Salle Institute, New York City.	
North Carolina	B	North Carolina College of Agriculture, W. Raleigh	x
North Dakota	B	North Dakota Agricultural College, Fargo.	
Ohio	B	Ohio State University, Columbus	x
	A	Marietta College, Marietta.	
	A	Ohio Wesleyan University, Delaware.	
	B	Ohio Normal University, Ada.	
Oregon	B	Oregon Agricultural College, Corvallis.	
Pennsylvania	A	Girard College, Philadelphia	x
	C	Pennsylvania Military College, Chester.	x
	B	Pennsylvania State College, State College	x
	A	St. Joseph's College, Philadelphia.	
South Carolina	B	Clemson Agricultural College, Clemson	x
	C	South Carolina Military Academy, Charleston.	x
South Dakota	B	South Dakota Agricultural College, Brookings.	
	A	University of South Dakota, Vermillion.	

Tennessee.....	B	University of Tennessee, Knoxville.....	x
	A	University of the South, Sewanee.	
	A	Southern Normal University, Huntingdon.	
Texas.....	C	West Texas Military Academy, San Antonio	x
	B	Agricultural and Mechanical College of Texas, College Station.....	x
		Peacock Military School, San Antonio.	
Utah.....	B	Agricultural College of Utah, Logan.	
Vermont.....	C	Norwich University, Northfield.....	x
	B	University of Vermont.....	x
Virginia.....	C	Virginia Military Institute, Lexington.....	x
Washington.....		Gonzaga College, Spokane.	
	B	Washington Agricultural College, Pullman.	
West Virginia....	B	West Virginia University, Morgantown....	x
Wisconsin.....	B	State University of Wisconsin, Madison....	x
Wyoming.....	B	University of Wyoming, Laramie.....	x

"x" in the right margin: Institutions which grade the military department equally with other departments and make proficiency therein a requisite for securing a diploma. Names of most distinguished students in the military department graduated at last commencement appear in Annual Army Register.



PERSONAL RECOLLECTIONS OF GENERAL GRANT AND HIS CAMPAIGNS IN THE WEST.*

By Major-General GRENVILLE M. DODGE, U. S. V.

AS a soldier, General Grant stands first in all the history of warfare. As a citizen, his acts, his foresight, and his method of meeting and settling all great questions, stamp him as the peer of the best statesmen that the world has produced. In fact, in the Old World his statesmanship is considered equal to his great achievements as a soldier. As he came to be known only after he was forty years old, the question naturally arises, Was there anything in his boyhood or early manhood that indicated the abilities that were so rapidly developed during the Civil War? He says that as a boy he only loved horses and work on the farm, not books, and that even the uniform of a soldier had no attractions for him; that he was an indifferent scholar, and preferred reading a novel to studying his lessons; that his great desire was to travel and see our country, and when he was appointed to West Point the only inducement for him to accept was the disgrace it would bring upon him to decline after his father had asked for the appointment; and, finally, he was reconciled to it because it would enable him to see Philadelphia and New York; and that his long stay in those cities, instead of repairing promptly to West Point brought a sharp reminder from his father.

At West Point Grant was an indifferent scholar, had a positive dislike to everything military, and neglected his studies. After graduating he remained in the army, hoping to be a professor at West Point, rather than an officer in the field. He considered the Mexican War an unholy one. He says: "I regarded the war as one of the most unjust ever waged by a stronger against a weaker nation, from the inception of the movement to its final consummation—a conspiracy to acquire territory out of which slave states might be formed for the American nation. The Southern Rebellion was the outgrowth of the Mexican War."

*Delivered before the New York Commandery of the Military Order, Loyal Legion, U.S.

Grant joined Taylor's command on the Rio Grande, and although acting as quartermaster, he took part in nearly all the battles. He says: "At the battle of Monterey my curiosity got the better of my judgment, and I mounted a horse and rode to the front to see what was going on. I had been there but a short time when the order to charge was given, and lacking the courage to return to camp, where I had been ordered to stay, I charged with the regiment."

He evidently took in the tactics, logistics and strategy, and sometimes criticized them. In one or two of the last fights, near the city of Mexico, he thought the enemy could have been driven out by flank movements without the great losses in front attacks on the enemy's strong positions. At the gates of Mexico he developed some of those wonderful qualities that were so prominent in the Civil War, when he took his little squad of men to flank the Mexican troops out of their position at the Garita San Cosme, and caused the fall of the city of Mexico, and received the commendation of the commanding officer, and was brevetted.

After this campaign in the Mexican War, he seemed less inclined than ever to follow the army permanently, and soon resigned and returned to civil life.

General Grant entered the service in the Civil War as Colonel of the 21st Illinois Infantry, and brought the regiment to great efficiency. He was sent to northern Missouri. His first order was to march against Colonel Harris, who had a rebel regiment near the town of Florida. General Grant says: "As we approached the brow of the hill from which it was expected we could see Harris' camp, and probably find his men ready formed to meet us, my heart kept getting higher and higher until it felt to me as though it was in my throat. I would have given anything then to have been back in Illinois, but I had not the moral courage to halt and consider what to do. I kept right on, and when I found that Harris had left, it occurred to me at once that Harris had been as much afraid of me as I had been of him. This was a view of the matter I had never taken, and it was one I never forgot afterwards. From that event until the close of the war, I never experienced trepidation upon confronting the enemy, although I always felt more or less anxiety. I never forgot that the enemy had as much reason to fear my force as I had his. The lesson was a valuable one."

From north Missouri he was sent to southeast Missouri, and was then made a brigadier-general, and ordered to Cairo. His first important battle was Belmont, brought about by his movement to threaten Columbus. His orders were to make a demonstration against the Confederate force at or near Columbus, Tenn., to prevent their sending reinforcements to a Confederate command that a Federal force had been sent to attack on the St. Francis River.

Belmont.

Grant had no intention of fighting a battle when he started out. His orders did not contemplate an attack, but after he started he says that he saw that the officers and men were elated at the prospect of doing what they volunteered to do, fight the enemies of their country, and he did not see how he could maintain discipline or the confidence of his command if he returned to Cairo without attempting to do something. This battle first brought the country's attention to Grant. He displayed that confidence, good judgment and self-reliance that afterwards became so conspicuous.

Fort Henry and Donelson.

General Grant was ordered soon after Belmont to make a demonstration up the Tennessee River, and towards Columbus, Ky., with a view of holding the Confederate forces there while the campaign around Bowling Green was proceeding. In this movement Gen. C. F Smith reported that Fort Heineman, opposite Fort Henry, on the Tennessee River, could be captured. Grant believed the true line of operation for his force was by the Tennessee and Cumberland Rivers, and asked permission to visit St. Louis and lay the plan before General Halleck, but says: "I was received with so little cordiality that I perhaps stated the subject of my visit with less clearness than I might have done, and I had not uttered many sentences before I was cut short as if my plan was preposterous, and I returned to Cairo very much crestfallen." On his return he consulted Flag-Officer Foote, who commanded the gunboat fleet on the Mississippi River, and he agreed with Grant, and, notwithstanding his rebuff, Grant renewed the suggestion, backed by Flag-Officer Foote, and on January 28th wrote General Halleck

fully in regard to his plans. On the first of February he received instructions, going fully into every detail, to march upon and capture Fort Henry. On the second the expedition was started, and on the sixth Fort Henry was captured, and Grant wired Halleck that on the eighth he would move on Fort Donelson, not even waiting for orders to do so. On February 16, 1862, Fort Donelson surrendered to him with its entire force. Grant in this battle displayed the tactics which were ever in his mind, that when the enemy attacked to also attack on some other portion of the line, and when the enemy attacked and turned his right he immediately attacked and turned the enemy's right, and carried their intrenchments, forcing the final surrender.

In writing Mrs. Grant of the capture of Forts Henry and Donelson, he says: "These terrible battles are very good things to read about for persons who lose no friends, but I am decidedly in favor of having as little of them as possible. The way to avoid it is to push forward as vigorously as possible."

After Forts Henry and Donelson, Grant started to carry out this program and visited Clarksville and Nashville. Because General Halleck, his commanding officer, did not receive prompt reports from General Grant, he issued this order:

"You will place Maj.-Gen. C. F. Smith in command of expedition and remain yourself at Fort Henry. Why do you not obey my orders and report strength and position of your command?"

Up to this time Grant had not received one word from Halleck, and all his reports sent to Halleck went to the end of the telegraph line, where the operator was a rebel, who deserted and took all these dispatches with him. Buell, Halleck and McClellan all failed to comprehend Grant's great victories. They were looking for the enemy to recover, while Grant thought of nothing but their demoralization and the desire to follow them. Grant, on the ground, was the only person who saw the situation, and had any power to take advantage of it. The rebels, in their consternation, abandoned everything as fast as possible, and even evacuated Chattanooga, three hundred miles away.

When Halleck got into communication with Grant, he informed him that he was advised to arrest him because he went to Nashville, a point within his own command, and no one could hear from him. They could not trust the man who

within thirty days had broken through the entire rebel line, driven their forces beyond the Tennessee and captured their fortified places and all the troops in them. In writing of this to his wife, Grant says:

"All the slander you have seen against me originated away from where I was. The only foundation was the fact that I was ordered to remain at Fort Henryand send the expedition up the Tennessee River under command of Maj.-Gen. C. F. Smith. This was ordered because General Halleck received no report from me for near two weeks after the fall of Fort Donelson. The same thing occurred with me. * * * I was not receiving the orders, but knowing my duties was reporting daily and, when anything occurred to make it necessary, two or three times a day. When I was ordered to remain behind it was the cause of much astonishment among the troops of my command and also a disappointment. When I was again ordered to join them they showed, I believe, heartfelt joy.

"I never allowed a word of contradiction to go out from my headquarters, thinking this the best course. I know, though I do not like to speak of myself, that General Halleck would regard this army badly off if I was relieved. Not but what there are generals with it abundantly able to command, but because it would leave inexperienced officers senior in rank. You need not fear but what I will come out triumphantly. I am pulling no wires, as political generals do, to advance myself. I have no future ambitions. My object is to carry on my part of this war successfully, and I am perfectly willing that others may make all the glory they can out of it."

General McClellan, on Halleck's recommendation, ordered that Grant should be relieved from duty and investigation made. He even authorized Grant's arrest. This, within two weeks of his great victory that electrified the country. Grant's explanation of delays in receiving dispatches, his visit to Nashville, etc., reached Halleck, and Grant was restored to his command on March 13th, Halleck claiming his explanation to Washington had exonerated Grant, but he did not inform Grant that his whole trouble came from his (Halleck's) misleading reports to Washington.

Grant proceeded immediately to Savannah, Tenn., where he found Gen. C. F. Smith in command, sick, and who soon died.

General Grant says, of the condition of the South after the

fall of Donelson, that his opinion was and still is that the way was open for the national forces to occupy any part of the Southwest without much resistance. If one general had been in command of all the forces west of the Alleghenies, who could have taken the responsibility, he could have moved to Chattanooga, Memphis, Corinth and Vicksburg, and with the troops pouring in from the North, he could have kept all these places, leaving his army to operate against any body of the enemy that could have been concentrated in his front. Rapid movement, with the occupation of the enemy's territory, would have discouraged a large number of young men who had gone from that territory into the rebel army, and brought them back, and we would have permanently held that territory that cost so many lives to conquer later, but our delays gave courage to the enemy, and they collected new armies, fortified their positions and twice afterward came near making their line on the Ohio River.

Shiloh.

No campaign or battle of Grant's has received such unjust and severe criticism as the battle of Shiloh, but as we now read the official reports of that battle, we see that at night, on the first day of the battle, Grant was master of the field, with Wallace's division of 5,000 fresh troops that had not fired a gun; that the enemy were exhausted and demoralized and had no reinforcements, and, as Grant claims, he would have whipped them the second day without the aid of Buell. The fact is from the very moment of attack on the second morning Beauregard, who was in command after the death of Albert Sidney Johnston, commenced retreating, and fell back to Corinth, and Grant, if he had not been restrained by orders, would have within a week had his forces facing Corinth, less than twenty miles away. The one mistake made by Grant at Shiloh was in not intrenching his forces as they arrived from day to day, on the general line of defense. Grant admits this, but says it was his purpose to proceed immediately against the enemy at Corinth he did not think it necessary, and it never entered his mind that the enemy would attack him. Besides, these troops were mostly green, and needed drilling and discipline more than they did experience with pick and shovel, and Grant also says that there was no hour during the day when he doubted the eventual defeat of the enemy.

In the first day's battle the forces on each side were about equal. Grant says that up to Shiloh he believed the rebellion would collapse suddenly, as soon as a decisive victory could be gained, and after such victories as the capture of Donelson, the fall of Bowling Green, Nashville (with its immense amount of stores), Columbia, Hickman, opening the Tennessee and Cumberland from mouth to head, he believed peace would come. After this, when Confederate armies were collected, and new lines of defense from Chattanooga to Corinth and Knoxville and on to the Atlantic, were formed, and they took the offensive, he gave up all idea of saving the Union except by complete conquest. Up to this time he had protected property and citizens; after this he pursued the plan of consuming and destroying everything that could be used to support and supply armies, and this policy he pursued to the end of the war.

Grant never made a report of the batle of Shiloh, as Buell, who commanded the Army of the Ohio, refused to make reports to him. A few days later General Halleck arrived at Pittsburg Landing and assumed command, and Grant was placed second in command and ignored. Halleck had three armies: the Ohio, Buell commanding; the Army of the Mississippi, Pope commanding, and the Army of the Tennessee, Grant's old command, which Gen. George H. Thomas was assigned to the command of. There was no time after the battle of Shiloh but that the enemy would have retreated from Corinth had a movement been made against it. Beauregard had about 50,000 men in Corinth, while against him were 100,000, and any of the three armies could have planted itself on his communications and forced him to fight in the open or retreat. Grant suggested to Halleck such a move by the left, but says he was silenced so quickly that he thought probably he had suggested an unmilitary movement. Logan, who commanded a brigade, on the 28th day of May told Grant the enemy had been evacuating several days, and if they would let him he could go into Corinth with his brigade. Beauregard published his orders for and evacuated on the 26th of May, and our army entered on the 30th, the enemy not leaving a thing, not even a sick or wounded soldier. Even after they had left, Halleck issued orders on the 30th of May for a battle, and had his whole army drawn up in line to meet the enemy. The army was greatly disappointed at the result. Grant says he was satisfied Corinth could have been captured

in a two days' campaign, made immediately after Shiloh, without any additional reinforcements, and that after Corinth they had a movable force of 80,000 men, besides sufficient force for holding all territory acquired in any campaign. New Orleans and Baton Rouge were ours, and the enemy had only a single line of railroad from Vicksburg to Richmond, and in one move we had the opportunity to occupy Vicksburg and Atlanta without much opposition, but we continued to pursue the policy of distributing this great army, and for nearly a year accomplished no great results from it, giving up the territory back to Nashville, holding only the line from the Tennessee River to Memphis.

General Grant's position at Corinth, with a nominal command, became so unbearable that he asked permission of Halleck to move his headquarters to Memphis. He had asked to be relieved from a command under Halleck, but Sherman prevailed upon him to stay. On June 21, 1862, he moved to Memphis. On July 11th, Halleck was placed in command of all the armies at Washington, and Grant returned to Corinth, and in July, 1862, was given only the command of the District of West Tennessee, which embraced West Tennessee and Kentucky west of the Cumberland.

As one reads the reports and makes comparisons—first Grant fighting at every opportunity, winning every battle, pleading to move on the enemy after every battle, but stopped, humiliated after each campaign, and finally when given a command only allowed a district; while on the other hand Halleck, who had not fought a battle, who took fifty-five days or more with two men to the enemy's one to make twenty miles, which by a simple flank movement could have been accomplished in two days, with one of the best opportunities of the war to capture or destroy an army of 50,000 men—Halleck, who prevented Grant from reaping the full benefit of every battle he fought, is brought to Washington and given full command of all the armies, while Grant was not even allowed to resume command of the department he vacated,—the record is most astonishing. Halleck had no confidence in Grant. The officers in the field looked on in amazement, and wondered what the powers in Washington could be thinking about. Grant accepted whatever was given him, never making a word of protest or complaint. He was now again in position to commence moving on the enemy, and although Halleck's great army had been distributed, Grant had

left in his command 50,000 troops, and commenced preparing for another movement, not even suggesting that more force be sent him. There was facing him an army of about 40,000 men under Van Dorn, and Grant with his numerous posts and large territory could not muster more than 20,000 men for an aggressive army. He says that his most anxious period during the war was the time that he was guarding all this territory until he was reinforced and took the aggressive.

On August 2d, Grant was ordered to live upon the country, upon the resources of citizens hostile to the Government, to handle Confederates within our lines without gloves, impoverish them and expel them from our lines. Grant did not see the necessity of this, and says he does not recollect having arrested or imprisoned a citizen during the entire rebellion.

During this time, with his inferior force, Grant sent two divisions to Buell and one to Rosecrans at Corinth.

Van Dorn, who commanded the rebel army in Grant's front, soon saw how small a force Grant had, and decided to attack him. He brought Price's army across the Mississippi River, and both combined and moved on Grant's lines. Grant moved to Jackson himself, so he could be in close touch with his force and where, by the railway from Jackson to Grand Junction and Jackson to Corinth, he could reinforce the point attacked more readily. Price immediately moved on Iuka, and Grant saw a chance to defeat and capture him, and went immediately to Glendale, sending Rosecrans' force from Corinth to the rear of Price, and General Ord to head him off. A portion of Rosecran's force fought Price near Iuka, but Ord did not know or hear of the battle, although the order was if either force was attacked to notify the other. There were two roads leading out of Iuka to the south, and Rosecrans was ordered to take possession of both, but failed to occupy the easterly one, and during the night Price retreated on this road, avoiding both Rosecrans and Ord Van Dorn and Price combined their forces southwest of Corinth, and moved immediately on that place. As soon as Grant ascertained this he ordered Hurlbut with all the force he had to move from Memphis and get in Van Dorn's rear, and started McPherson with a division from Jackson to reinforce Rosecrans. Van Dorn commenced his attack on Corinth on October 2d. Rosecrans had pushed his second division out nearly three miles from Corinth, and allowed the attack to fall upon this division, which was steadily pushed back during the day until

it finally reached the inside works at Corinth, fighting very gallantly at every one of the lines of defense. On the second day Van Dorn and Price had Corinth practically invested, and a very severe battle ensued, both sides fighting with great gallantry and great loss. Van Dorn and Price were completely defeated, and their army retreated completely demoralized, and should have been relentlessly followed, and their trains and artillery captured, and, although Grant urged this in dispatch after dispatch, for some reason there were delays, and when the troops did follow them they took the wrong road, which enabled the enemy to escape, although Hurlbut's and Ord's forces captured portions of their trains and artillery.

Grant criticises Rosecrans severely for his movements in these battles, and censures him for failing to capture Price at Iuka, and to follow Van Dorn after Corinth. There were many protests from McPherson, Hurlbut and other officers, who were ordered to aid Rosecrans in these battles, and these protests especially related to his reports.

Mrs. Grant, who was present with General Grant at Jackson, stated that these officers appealed to her in the matter, and in her talk with General Grant he was disinclined to relieve Rosecrans. While the matter was under discussion, on October 23, 1862, the War Department assigned Rosecrans to the command of the Army of the Cumberland. Mrs. Grant says when Grant received the dispatch he came out of the tent holding it in his hands, and declared that his greatest trouble had been solved. Grant says in relation to Rosecrans that as a subordinate he found that he could not make him do as he wished, and had finally determined to relieve him from duty if he had not received this assignment, and that he was greatly pleased at his being assigned to the command of the Army of the Cumberland, believing that perhaps in such a position he would be more efficient and useful than he was as a subordinate.

Grant up to this time had only been commanding the District of the Tennessee, but still had in his command 50,000 men. The authorities at Washington still seemed disinclined to give him the command he was entitled to, but on October 25, 1862, he was placed in command of the Army and Department of the Tennessee.

At the time of the battle of Corinth I was in command of the fourth division, District of West Tennessee, and was rebuilding the railway from Columbus to Corinth. I had just made the

connection at Humboldt, and had been several days at the front giving personal attention to the work. I received a dispatch from General Quimby, my commanding officer, directing me to report immediately at Corinth for orders. I was away from my own headquarters in a working undress suit; had nothing with me and hesitated about going as I was, but I concluded it was best to report, so took the train, and at Jackson, Tenn., Col. John A. Rawlins came to the train and asked if I was on board. I made myself known to him, and he informed me that General Grant was out on the platform and desired to see me. I apologized to Colonel Rawlins, stating that I was not in proper condition for presenting myself to the commanding officer. He saw my predicament, and said: "Oh! we know all about you; don't mind that." I stepped out on the platform. General Grant met me, shook me cordially by the hand, and I then saw that he was no better dressed than I was, which greatly relieved me. In a few words General Grant informed me that he had assigned me to the command of the Second Division of the Army of the Tennessee at Corinth, and quietly, but with a determination that struck me so forcibly that I could make no answer, said: "And I want you to understand that you are not going to command a division of cowards." General Rosecrans, in his official report of the battle of Corinth, had branded the men as cowards, and General Grant had disapproved his action and comments. The division won imperishable renown. Upon its banner was inscribed "First at Donelson," and from that time until after the Atlanta campaign they served directly under me. From Corinth until the end of the war they took no step backward. Their great battle of Atlanta, where they held a whole corps of Hood's army, and afterwards Altoona, when, under General Corse, they held that strategic point against the terrific onslaughts of four times their number, gave me cause to always remember the words of General Grant.

Grant's first plan of campaign against Vicksburg was for Sherman with 30,000 men to go down the Mississippi River by boat and attack Vicksburg from the Yazoo side, while Grant attacked Pemberton and his army, then at Granada, and if Pemberton retreated, follow him to the gates of Vicksburg. Gen. J. E. Johnston soon saw the danger of this combined attack of Grant and Sherman on Vicksburg, and immediately ordered a movement of General Van Dorn and all his cavalry,

together with the forces of Generals Jackson and Forrest, from Middle Tennesee upon Grant's communications, to force the abandonment of Grant's advance.

At the same time the force I commanded at Corinth was to move down the Mobile and Ohio road towards Meridian for the purpose of protecting that flank, and hold what force I could in my front. On December 9th, Grant wired me that Jackson's cavalry, some 3,000 men, he thought, was starting to my rear, and again on December 13th, to take such force as could be spared, and, with troops at Jackson and those in the field, attack Forrest and drive him across the Tennessee. The Ohio Brigade, under Colonel Fuller, struck Forrest at Park's Cross Roads, whipped him, captured 400 prisoners and all his artillery, and by January 7th, Forrest had been driven across the Tennessee, and Jackson had been driven south of the Tallehatchie, and I reported in the following dispatch:

"Had gunboats come up the river at the time requested, or had General Davies been allowed even a transport with a piece or two of artillery to come and destroy the flats, we should have captured the rebel (Forrest's) force on this side of the river. As it was, they had several hard knocks before they escaped. Captured four cannon and 600 prisoners."

On December 20th, Van Dorn attacked Holly Springs where were stored all of Grant's supplies. Colonel Murphy, who commanded this post and had plenty of troops to defend it, surrendered without firing a gun. This combination of Johnston's and the surrender of Holly Springs forced Grant to retreat to the line of the Mobile and Ohio road, and allowed Pemberton to move to Vicksburg and defeated Sherman's attack upon that point.

This is the first, and, I believe, only case where a campaign was defeated and two separate armies forced to retreat by a cavalry raid, one going down the Mississippi River to Vicksburg, and the other toward Vicksburg by way of Granada, and was the first time Grant ever abandoned a campaign. As he fell back he lived off the country, and finding his army was so easily fed he said that if he had had the experience before he would have left his base of supplies and pushed on to Vicksburg, living off the country, holding or defeating Pemberton, and preventing him from reaching Vicksburg before Sherman could have taken it. After this time Grant and all the armies he commanded followed this policy, obtaining their

rations by living off the country when necessary. Especially was this the case in his campaign in the rear of Vicksburg, which immediately followed after the defeat at Holly Springs.

After the defeat of Sherman and the loss of Holly Springs, Grant determined to move his whole command down the Mississippi River, leaving me in command at Corinth to cover his left flank, and preventing any portion of Bragg's Army from reaching the Mississippi River, or, in fact, making a lodgement west of the Tennessee.

Grant on the Vicksburg Campaign.

As soon as Grant moved down the Mississippi, and placed his army on the levees, he had determined in his own mind that bold campaign to the south and rear of Vicksburg. Knowing he could not make it until the waters fell in April or May, he utilized time and kept his troops busy in several plans for passing Vicksburg, or by using the Yazoo tributaries to make a landing to the north and east of Vicksburg. He had very little faith in these projects, although they tended to confuse the enemy and mislead them as to his real plan of campaign. He kept his own counsels as to this plan, knowing it would receive no support in Washington, but probably draw forth an order prohibiting it, and also receive criticism from all military sources, as the plan was an absolute violation of all the rules and practices of war, as it virtually placed his entire command at the mercy of the enemy, cutting loose from all the bases of support and supply, and that he must take with him all the rations and ammunition he would use in the campaign. Nevertheless, he never hesitated, though urged to abandon it by some of his ablest generals. Grant says he was induced to adopt the plan, first, on account of the political situation, which was threatening, the anti-war element having carried the Congressional elections, and the Confederates were forcing our troops as far North as when the war commenced; that, to abandon his campaign and return to Memphis, the nearest point from which he could make the campaign by land and have a base and railroad to supply it, would be very disheartening to the Government and the people. Grant ran the batteries and landed his forces on the east side of the Mississippi River, and faced the enemy with less men than they had, and in the entire campaign, when he planted himself in the rear of

Vicksburg, he had only 43,000 men while the enemy had 60,000. In comparison as to boldness, the total ignoring of all former practices of warfare, the accepting of the probability of nine chances of failure to one of success, this campaign has never been approached in its originality and the wonderful grasp of its possibilities and great fighting success. Viewing it from this standpoint, it cannot be compared to any other known campaign. After Vicksburg, the Confederacy was doomed, and Gettysburg coming at the same time, lifted the nation from the slough of despondency to the highest point of hope, enthusiasm and certainty of success.

As soon as this campaign was over, Grant wished to move immediately on Mobile, but that fatal policy that had formerly scattered a great army and relieved Grant of his command, was renewed here. He lay quiet, his great abilities unutilized, until the disaster at Chicamauga forced the Government to again use him to retrieve our misfortune, and again snatch victory out of a threatening disaster.

Right after the Vicksburg campaign General Grant proposed occupying the Rio Grande frontier, because the French had entered Mexico, and to use immediately the rest of his army to capture Mobile, and move on Montgomery and Selma, Alabama and perhaps Atlanta, Georgia, using the Alabama River from Mobile to supply his column, but again his great victorious army was scattered. Parke, with the 9th Corps, was returned to East Tennessee, and Sherman, with the 15th Corps ,was started from Memphis to march along the Memphis and Charleston Railway to the Tennessee River, and up that river slowly, evidently for the purpose of being in position to aid Rosecrans in his campaign against Bragg.

Chattanooga.

Right after the battle of Chicamauga and the concentration of the Army of the Cumberland in Chattanooga, the dispatches of the Assistant Secretary of War, Charles A. Dana, who was in Chattanooga, greatly alarmed the authorities in Washington, and at a conference it was decided to at once place that army in General Grant's command, and the Military Division of the Mississippi was organized, which virtually included all the territory west of the Alleghenies. General Grant was placed in command of it, and proceeded immediately to Chattanooga.

In ten days he placed a starving army on a safe basis, had opened its cracker line, and was forming his plans to attack Bragg. Sherman, who was marching from the Mississippi east, was ordered to drop everything and move to Chattanooga. Sherman had commanded the 15th Army Corps, but now took command of the Army of the Tennessee, and moved rapidly east with the 15th Army Corps, then commanded by Frank P. Blair, and the left wing of the 16th Corps, commanded by Dodge. On November 5th, Grant ordered Sherman to leave Dodge's command at Athens, Alabama, to rebuild the Nashville and Decatur Road, which he said was necessary for him to have to feed his army. He said in his letter: "It is not my intention to leave any part of your army to guard roads, and particularly not Dodge, who has kept continuously on such work."

There was a combination of circumstances at Chattanooga that rendered it necessary for Grant to fight at once. As Longstreet had left Bragg's front for the purpose of whipping Burnside at Knoxville, the authorities in Washington were greatly disturbed at the fear of losing East Tennessee, which was almost unanimously Union in its sentiment, and dispatches were continually coming to Grant from Washington to go to the aid of Burnside. Grant's answer was that he would fight as soon as Sherman got up, and that would in effect relieve Burnside. On November 21st, Grant wired to Halleck: "I have never felt such restlessness before as I have at the condition of the Army of the Cumberland." Sherman reached Chattanooga himself on November 17th, his force arrived on November 26th, and the battle was immediately fought.

Grant's plan of the battle was well considered and made out before Sherman's arrival. His principal attack was to be made by Sherman on Tunnel Hill, Bragg's right flank, in order to force Bragg to weaken his center, and, if possible, for Sherman to capture and hold the railroad in Bragg's rear, and force him either to weaken his lines or lose his communications with his base at Cleveland Station. Hooker was to perform a like service on our right (the enemy's left), and force his way from Lookout Valley to Chattanooga Creek and Rossville, forming a line there across the ridge, facing south, thus threatening the enemy's rear on that flank. Thomas, with the largest army, the Cumberland, was to assault in the center, while the enemy was engaged with most of his forces defending his two flanks, but Thomas was not to assault until Hooker reached

and formed at Rossville. After the first day's operation Grant sent this dispatch to Washington. "Fight to-day progressed favorably. Sherman carried the end of Missionary Ridge and his right is now at the Tunnel and his left at Chattanooga Creek. Troops from Lookout Valley carried the point of the mountain, and now hold the eastern slope and a point high up. Hooker reports 2,000 prisoners taken, besides which a small number have fallen into our hands from Missionary Ridge." Mr. Lincoln replied: "Your dispatches as to fighting on Monday and Tuesday are here. Well done. Many thanks to all. Remember Burnside." The next morning at daylight Sherman attacked. Grant had reinforced him with Howard's Corps coming from Hooker. Hooker carried Lookout, moved to his position, and finally Thomas' army moved against the center, carrying everything before it, and won a victory, whereas thirty days before the Government was considering how to extricate the Army of the Cumberland from the clutches of Bragg. Grant pursued to Ringgold, where the Iowa troops suffered terribly in an unnecessary assault, as in a couple of hours the enemy would have been flanked out of the position. The victory at Chattanooga was won against great odds, considering the advantage the enemy had in position and intrenchments. Bragg made several grave mistakes. First, in sending away his ablest corps commander, Longstreet, with 20,000 men, to attack Burnside at Knoxville. Second, in sending away a division of troops on the eve of battle. Third, in placing so large a force on the plain in front of his impregnable intrenchments and position.

I have heard it said that this battle was fought by the men without orders or plan, but General Grant said to me that in all the battles he had fought this one followed more closely his plans and original orders than any other.

Right in the midst of the battle Lincoln wired Grant not to forget Burnside. Grant wired: "I will start Granger this evening to Burnside's relief."

Grant followed the enemy to Ringgold, and stayed over night at Graysville with Sherman, and returned to Chattanooga on the evening of the 28th. He says: "I found Granger had not got off, nor would he have the number of men I had directed. He moved with reluctance and complaint, and I therefore determined, notwithstanding the fact that two divisions of Sherman's army had marched from Memphis and gone

into battle immediately on their arrival at Chattanooga, to send him with his command, and also gave him Howard with his 11th Corps. Granger's order was to accompany him." Sherman's troops were not fit to make this march to Knoxville. They were without clothes, shoes, blankets or overcoats.

Sherman's movement with Howard and Granger's corps of the Army of the Cumberland saved Knoxville, as Longstreet had invested it. Sherman proposed to Burnside that Longstreet should be driven out of Tennessee, but Burnside thought he could do it without using Sherman's force. He thought that Longstreet would either get out of East Tennessee, or return to Bragg's army, but was mistaken, and this mistake caused a great deal of trouble, and was one of the main reasons of preventing Grant's comprehensive campaign for the winter. Longstreet remained in East Tennessee until spring and was the cause of continual anxiety in Washington and at Knoxville. Grant said that it was a great mistake, and greatly regretted that he did not insist upon their fighting Longstreet, and forcing him to retreat from East Tennessee when the movement was first made.

As soon as the Chattanooga and Knoxville campaigns were completed, General Grant wrote Halleck that they could not make a winter campaign south of Chattanooga on account of the difficulty of the mountain region and the rainy season, and to utilize his large force he proposed to gather up a sufficient force and move by the Mississippi River to New Orleans, and then to Mobile, and attack or invest that place, capture it, and then move into Alabama, and perhaps Georgia—a very feasible operation. as he could have water communication to Selma and Montgomery. Sherman was to move from Vicksburg with 5,000 men from Hurlbut's command, and McPherson's 17th Corps, then stationed at or near Vicksburg, east to Meridian, destroying the railroads and gathering all stock and supplies that the enemy could use.

On December 21, 1863, I was called to Nashville to meet Generals Grant and Sherman in relation to the part my command was to take in this combined movement. I was to take my corps, the troops at Corinth, and in connection with Gen. W. S. Smith's command of 10,000 cavalry, sweep the Tennessee Valley, then to Tombigbee Valley, in Mississippi, destroy all railroads there, then to Corinth, and then to Decatur, Ala. All stock and supplies were to be taken that could be utilized, the

intention being that the commands of Sherman and myself should destroy the railroads and take the products of the country, so that no considerable force of the enemy could remain long in West and Middle Tennessee and Mississippi.

The fear of Lincoln and Halleck that Bragg might recover and retake Chattanooga if Grant's army was moved from there, and the anxiety of Lincoln and Stanton for East Tennessee while Longstreet remained there, though General Foster, who commanded East Tennessee, had more troops than Longstreet, caused the abandonment of all this campaign except Sherman's movement from Vicksburg to Meridian. On December 27th, Grant started for Knoxville, telegraphing Washington he would force a battle in East Tennessee as soon as he arrived. Thus for the fourth time magnificent armies, competent to go anywhere, under the most competent commander, were dispersed and scattered, and during the whole winter virtually accomplished nothing.

December 20, 1863, Grant moved his headquarters to Nashville, and prepared his force for the spring campaign. He expected to make the campaign to Atlanta himself, and then to Mobile, if it had not already been taken, then to Savannah. Much contention has arisen as to who first suggested the move to Mobile and Savannah. There is no doubt Grant had it in his plans for his spring campaign which he expected to make in 1864. Whether he had indicated it to any one I do not know. However, Sherman evidently had it in mind as soon as the Atlanta campaign fell upon him, and probably both of them considered it a proper campaign to make, and Sherman made it with Grant's approval.

From early in the Rebellion Grant had been impressed with the idea that active and continuous operations of all the troops that could be brought into the field, regardless of season or weather, was the proper course to pursue. The armies in the East and West acted independently and without concert, like a balky team, no two pulling together, enabling the enemy to use to great advantage his interior lines of communications to reinforce the army most vigorously pressed, and to furlough a large number during the season of inactivity to go to their homes and work in putting in crops to be used for the support of their armies. Grant says that he therefore determined as soon as he was in command of all the armies, first—to use the greatest number of troops possible against the armed force of the enemy,

preventing him from using the same force at different seasons against first one and then another of our armies. Second—to hammer continuously against the armed force of the enemy and his resources until there should be nothing left of him.

Our experience proved how prophetic were Grant's recommendations and the results. Had his advice been followed in each of his great campaigns and his great victorious army on each occasion been held intact and used as he suggested, instead of being partially disbanded or lying in idleness, the war in the West would have been ended in 1862 or 1863. After Donelson, Grant said, there was nothing to prevent the combining of his own and Buell's army and moving to the line of the Memphis & Charleston Railway, using the Tennessee River as its base, and proceeding to the capture of Vicksburg and opening the Mississippi River. This was in 1862.

After Shiloh, Halleck's army of 100,000 men could have been used, and in sixty days Vicksburg would have fallen and the Mississippi would have been open, but Buell with his army moved east and finally fell back to the Cumberland River, from which he started, while the rest of Halleck's army was scattered over territory, accomplishing nothing.

After Vicksburg, Grant had 70,000 men, with whom he could have moved on Mobile, captured it, and by use of the Alabama River penetrated to Atlanta, but Parke was sent to East Tennessee with the 9th Corps, Sherman with the 15th Corps spent the summer moving from Memphis to Chattanooga, while A. J. Smith, with two divisions of the 16th Corps, went to Banks and was not utilized again until the fall of 1864.

After Chattanooga, Grant planned to move 30,000 men of that army to Mobile, and with the forces on the Mississippi take that city and penetrate to Atlanta by way of the Alabama River, while the rest of the army swept North Mississippi and West Tennessee and destroyed the communications so it could not be again occupied by a Confederate army. All these plans showed a mind and foresight that stamped him as a great general. If any of these plans had been carried out at the time they would have eliminated the Confederate army from the Western country, and made possible a concentration of the army against the Confederate forces in the East.

Before Grant assumed command of all the armies, there was promulgated a maxim of war that two battles by two different armies should not be fought at one time. An officer

of the highest rank and largest command, in commenting on this, said if our Western armies engaged all their forces at the same time it would leave them without a single reserve to stem the effect of possible disaster. This policy, of course, allowed the enemy, holding the interior lines, the opportunity to reinforce any one of its armies, and at all times bring an equal or superior force against any one of our armies. Grant's plans were the reverse of this, and his orders to all our armies were to move on the enemy at the same time and keep them busy, and prevent any one of the rebel armies from reinforcing the other, and it was this policy that so depleted the enemy's forces that within a year they were defeated and could not muster force enough to stop the movement of any one of our armies, and this brought peace.

Grant's four years' experience at West Point, and the acquaintances there formed, and in the Mexican War, gave him a knowledge of the officers on both sides in the Civil War, and while many people clothed Lee and Johnston with almost superhuman ability, Grant says he knew they were mortal, and it was just as well he felt this.

General Grant, in discussing the criticisms upon him, said: "Twenty years after the close of the msot stupendous war ever known we have writers who profess devotion to the nation trying to prove that the nation's forces were not victorious. Probably they say we were slashed around from Donelson to Vicksburg and Chattanooga, and in the East, Gettysburg to Appomattox, when the physical rebellion gave out from sheer exhaustion, I would like to see truthful history written, and history will do full credit to the courage, endurance and soldierly ability of the American citizen, no matter what section of the country he hailed from, or in what ranks he fought."

Speaking of those who opposed our country during the war, Grant gave this opinion: "The man who obstructs a war in which his nation is engaged, no matter whether right or wrong, occupies no enviable place in life or history. The most charitable posthumous history the stay-at-home traitor can hope for is oblivion."

It would be impossible for me to close my sketch of General Grant without paying a just tribute to the one who was so much with and to him, and to us, but whose work we do not see recorded in the war reports or the history of Grant in his official work in civil life. I speak of his devoted wife, Julia

Dent Grant. After every campaign she visited General Grant, and was welcomed by every one in his command. She had a kindly, gracious way that captured us. The officers who had annoyances and grievances they could not take to the General and his staff appealed to Mrs. Grant. She was very diplomatic and knew which to consider, and which she could not take up with the General, and many an officer could thank her for interceding and straightening out his grievances. We went to her with great confidence in what she could do, although she always asserted that she had no influence in army matters. I noticed none of us were ever concerned about or censured for our appeals to Mrs. Grant, and there is no soldier who did not love to see her with the army, and did not regret her departure. During Grant's administration, his troubles and his sickness, she was always the same. She straightened out many little contentions, and a suggestion to the General often pointed the way to settle many little annoyances. After General Grant's death I saw much of her, and was charmed with the great number of incidents she had stored away and her great memory for what had happened. At our army reunions we always had a word from her and sent her our greetings, and they were happy mile-stones in her life. Many happy hours I have spent with her as she recalled many of the events in the General's life, and his old comrades always received a hearty welcome from her. The nation will never know how much it is indebted to her loyal devotion and good advice, and it is a pleasing fact to record that in his own home General Grant was uneasy and discontented when Mrs. Grant was away. He was devoted and loyal to her, and his last request that she be laid at his side, no matter where they placed him, was worthy of the great man, as well as due to his devoted helpmate. The hold she had, not only on her own country, but on all others, was shown by the universal mourning at her death, and the great respect shown her as we laid her by the side of the General at Riverside.

In civil life as President, General Grant laid down the policies that the country maintains to-day on all great questions: the maintenance of the Monroe Doctrine, the settlement of all disputes by arbitration, the currency, gold standard, the upbuilding of the navy, the policy in the West Indies, acquisition of foreign territory, retirement of greenbacks until paid out for gold, and the education of our people, upon which nothing more

clear than his speech at Des Moines, Ia., has ever been uttered. It has always been an enigma to me to hear people speak of General Grant and say he was a great soldier but a failure in civil life, for his standing throughout the world is as high or higher for his acts as a civilian as for the great victories of the Civil War. Grant as a statesman was the same as he was when a soldier. When we were living in a camp and not on a campaign it was hard to get a reply to a letter or dispatch, or get any comfort from him, but the moment he got on his horse to lead a campaign it seemed as though he anticipated all events. His judgment seemed infallible, his decision was made instantly, and the answer to a letter or dispatch was ready the moment he read it. He never hesitated; he never was ambiguous. Any person receiving a letter from him did not have to ask a second time for an explanation, and he greatly objected to receiving dispatches showing indecision and expressing doubts during a campaign. To the subordinates he trusted he gave great latitude, and seemed to have the utmost confidence in their success. His orders stated what he wanted done, leaving to them all details, invariably saying if they needed help he would support them.

After the war it was my good fortune to be thrown with Grant a good deal, and I was associated with him in some of his enterprises, such as the railway from the City of Mexico to the Pacific Ocean, and it was impossible for me to meet him as I did and not comprehend that he was in civil life as in military life, of that peculiar make-up which could let small matters go without attention, but in any crisis would rise to command it. He was so modest and so simple that his greatness was absolutely forced upon one from his very acts. Nevertheless, so far no critic in this nation, or in any other, has been able to write a word against his military course or civil life which carried strength enough to be mentioned a second time. Grant's greatness was admitted long before he left our shores, and, although a simple citizen, he was honored as no one ever was before, and his simplicity astonished the world. Some critics of General Grant have said that during the war he absorbed from others many of his great qualities as a soldier, but no one can read the war records without seeing that the strength of his dispatches and orders, the boldness of his plans, his fearless attack of superior numbers and

his decisive victories in the early part of the war were equal, if not superior, to those of the last year of the war.

The great distinguishing qualities of General Grant were truth, courage, modesty, generosity and loyalty. He was loyal to every work and every cause in which he was engaged; to his friends, his family, his country, and his God, and it was these characteristics which bound to him with hoops of steel all those who served with him. He gave to others honors and praise to which he was himself entitled. No officer served under him who did not understand this. I was a young man, and given much larger commands than my rank entitled me to. Grant never failed to encourage me by giving me credit for whatever I did, or tried to do. If I failed he assumed the responsibility; if I succeeded he recommended me for promotion. He always looked at the intention of those who served under him, as well as to their acts. If they failed, he dropped them so quickly and effectually that the whole country could see and hear their fall.



COMBINED MANEUVERS OF THE REGULAR ARMY AND ORGANIZED MILITIA.

By Colonel ARTHUR L. WAGNER, General Staff U. S. A.

FROM the earliest periods of recorded history we find armies trained in peace for the work of war; for it is a self-evident fact that, given anything like an equality of morale, armament and leadership, that army will be victorious in war whose peace training has approached most nearly to the conditions of actual conflict. Josephus said of the Roman army, at the time of its highest efficiency, that its drills were like bloodless battles, and that its battles were like bloody drills. But in the days when tactics was principally of the nature of masses applied in shock, when missile weapons were crude and of insignificant range, and infantry and cavalry, both relying on "cold steel," constituted the only arms, the tactical problem was one of comparative simplicity, and drill approached so closely to tactics that the two subjects were practically identical. With the introduction of firearms a change began; with each successive development of fire-power the tactical problem has become more complex; the faint line of demarkation between drill and tactics has broadened into a deep boundary of separation; and it is now perhaps possible to find regiments renowned for the beauty and precision of their drill whose tactical knowledge is so limited that they would be of but little value on the field of battle.

The present system of field maneuvers, which has for its essential feature as close an approximation as possible to the conditions of actual war, owes its origin to the Prussian King, Frederick William I, the father of Frederick the Great. This sovereign, known as "the drill-master of Europe," noted for his harshness and eccentricities and for his fondness for tall soldiers and military precision, was a man of hard practical military sense. He recognized that it was not sufficient that his army could maneuver more rapidly and accurately than any other troops in Europe, and that they could load and fire with a rapidity exceeding that of any possible adversaries, but that their proper training required that they should acquire in time

of peace as complete a familiarity as possible with the conditions of actual war. He instituted the first autumn maneuvers, and his troops became accustomed to facing a supposed enemy under the conditions of battle and to the methods of attack and defense according to the circumstances in which they found themselves. To them there was nothing in the sights and sounds of battle that was novel, save the one important and dismal feature of killed and wounded. Frederick received from his father the heritage of the most perfect army that human prevision and persistent effort could create, and with what skill he used the magnificent weapon thus plaed in his hands history attests. It is a significant fact that Frederick, after passing through the first and second Silesian wars and emerging victoriously from the agonies of the Seven Years' War; after winning on fields of carnage the title of "the Great;" after enrolling his name on the small list of the world's greatest commanders by his deeds in stern, bitter, and mighty conflict, gave the greatest care and most earnest attention to the "mimicry of war" known as autumn maneuvers. He was plain and severe in his comments to a degree that would be impossible for any umpire not protected by the divinity which doth hedge a king. Of the maneuvers of 1785, Brackenbury says:

"During the autumn maneuvers in Silesia the year before, Frederick had been greatly disappointed at the want of tactical knowledge displayed by some of the generals, who had committed exactly the same faults that we see at autumn maneuvers now. In a letter to General von Tauentzien, the same who had defended Breslau so well against Loudon and who was now Inspector-General of Silesia, the king spoke very sharply: 'Were I to make shoemakers or tailors into generals the regiments could not be worse.' One regiment, he said, was not fit to be the poorest militia battalion; in another, the men were so spoiled by smuggling that they had no resemblance to soldiers; whilst a third was like a heap of undrilled boors. As for tactics, 'Schwartz, at Neisse, made the unpardonable mistake of not sufficiently occupying the height on the left wing.' One can imagine him thinking of Hochkirch and the Stromberg. 'Had it been serious the battle had been lost. At Breslau, Erlach, instead of covering the arm by seizing the heights, marched off with his division straight as a row of cabbages into that defile, whereby, had it been real war, the enemy's cavalry would have cut down our infantry and the fight been lost. It is not my purpose to lose battles by the base conduct of my generals; wherefore I hereby appoint that you next year, if I be alive, assemble the army between Breslau and Ohlau, and for four days before I arrive in your camp carefully maneuver with the ignorant generals and teach them what their duty is. Regiment von Arnim and garrison regiment von Kanitz are to act as enemy; and whoever does not then fulfill his duty shall be brought before a court-martial; for I should think it shame of any country to keep such people who

trouble themselves so little about their business. Erlach will remain four weeks longer in arrest. You are to make known this my present declared will to your whole inspection.' This specimen of Frederick's dealing with inefficient officers may serve to show how terribly in earnest he was, and, to some extent also, why the Prussian Army was then, and has since been, so tremendous a weapon in the hand of those who have known how to use it."

After the death of Frederick, the form of the training of the Prussian army remained, but its master spirit was gone; pedantry had succeeded genius and conservatism was content with self-copying; and we find the Prussian Army in 1806, anachronistic and decadent in its methods, unable to cope with the vigorous and practical tactics of Napoleon.

Probably the most complete regeneration of a nation that has ever been seen was that of Prussia under the influence of the crushing defeat of Jena; and most marked among the features of the new and vigorous Prussian national life was the training of the army. In this training the annual maneuvers constituted a marked figure. They were, apparently, not looked upon with any degree of admiration or appreciation by the rest of Europe; but when Prussia, after fifty years of peace, springing into the lists against Austria, a larger nation possessing a larger army and having the experience of two great wars within the preceding seventeen years, crushed her antagonist in a dazzling campaign of only six weeks' duration, the nations of Europe turned their attention earnestly to the Prussian military system. This was emphasized when, four years later, France, until then recognized as the first military power of Europe, sank quickly under the well-directed and powerful blows of her German adversary. Not only were the organization and training of the victorious Prussians carefully studied, but the system of maneuvers was adopted by all the military nations of Europe. "Barrack yard drills" were no longer deemed sufficient, and it was recognized that the highest efficiency of an army demanded its training in the duties of war and its handling in the assimilated conditions of conflict.

In the United States, the first systematic instruction in tactics, in contradistinction to mere drill, was introduced at the Infantry and Cavalry School at Fort Leavenworth, Kan. The forces employed at that post never consisted of more than a regiment of infantry, a squadron of cavalry and a single battery of field artillery; and from the nature of things the instruction did not rise to the dignity of maneuvers, but par-

took, rather, of the character of a series of small tactical problems. It is interesting to note that many of the officers who, as students at the Infantry and Cavalry School, received this instruction have since served in the Spanish and Philippine wars, and it has been remarked by many of them that they found this instruction more valuable to them in actual service than any other that they had received in time of peace. The system of practical tactical instruction introduced at Fort Leavenworth was afterward adopted at the Cavalry and Field Artillery School at Fort Riley, Kan., where the garrison consisted, as the name of the school implies, of cavalry and artillery alone; though, on at least one occasion, namely, in 1896, the garrison was temporarily increased for the purpose of maneuvers by the addition of a battalion of the sixth Infantry, which marched over from Fort Leavenworth. At Chilocco, Indian Territory, in 1889, General Merritt assembled a command, consisting of two regiments of cavalry, fourteen companies of infantry, and two batteries of field artillery, in a camp of instruction, in which a series of tactical problems was carried out. Similar tactical training was introduced at a number of our different posts, but with the exception of these small beginnings, there was but little systematic practical instruction in tactics in the United States before the Spanish War. In the days when the majority of our officers received the valuable actual experience afforded by Indian campaigns, this tactical training, though always valuable, was not so necessary; but this practical war experience had ceased, and the number of officers who had been schooled in the Great War and in subsequent campaigns on "the frontier" was steadily diminishing.

At Fort Riley, in 1902, about 6,000 regulars and militia were assembled under command of Major-Gen. John C. Bates, U. S. Army, in the first real maneuver camp, in the full sense of the term, that was ever held in the United States. The maneuvers on this occasion consisted of a number of tactical problems, most of them being of a somewhat elementary nature, but at least three of them being on a scale and of a kind that furnished a true indication of the development of the system of maneuvers. The rules for the conduct of the maneuvers at Fort Riley, in 1902, were drawn up by a board of officers which assembled in Omaha, and which took as its basis the regulations that had been used at the schools at Fort Leavenworth and Fort Riley, with the addition of such rules

in use in foreign maneuvers as could be readily adapted to our somewhat different conditions. The maneuvers at Fort Riley, in 1902, were highly successful. The interest aroused on the part of officers and men was very great, and it was noted with much satisfaction that the officers who displayed the most zeal in these maneuvers and performed the best duty therein were mainly those officers who had recently had actual experience in war.

In 1903, two large maneuver camps were established, one at West Point, Ky., where the maneuvers lasted from the 28th day of September to the 13th day of October, inclusive, and another at Fort Riley, Kan., where the maneuvers began on the 16th day of October and ended on the 30th day of the same month. Each of these camps was under the command of Maj.-Gen. John C. Bates, U. S. A. The maneuvers in 1903 marked a decided step in advance of those held in the preceding year. The rules for the conduct of the maneuvers that had been in use at Fort Riley in 1902 were amended and further amplified for the use of the maneuvers at West Point, Ky., and these regulations were still further changed for use in the maneuvers at Fort Riley, which immediately followed. The maneuvers thus far had partaken rather of the nature of camps of instruction than of maneuvers in accordance with the European system. In fact, each of these camps has been not inaptly termed "a military Chautauqua," for, in addition to the tactical training, there were lectures on different military subjects, object lessons in field fortification and the construction of military bridges, and drills of brigades and regiments. The maneuvers at West Point, Ky., consisted of a series of advance-guard and rear-guard problems, the attack and defense of outposts, the contact of opposing forces, and the attack and defense of a fortified position. Those at Fort Riley were similar in nature and included also the attack and defense of a convoy, and a night march and an attack at dawn. The maneuvers were instructive and highly successful.

In 1902, the maneuvers were held on the military reservation at Fort Riley, which was found altogether inadequate. In the following year, land was rented at West Point, Ky., and certain land, in addition to the reservation at Fort Riley, was secured, so that the maneuver area in each case embraced, in round numbers, about 30,000 acres. The increased area thus acquired was of great military advantage, but it was still too

restricted to permit of ideal maneuvers, in which two forces, operating from points a number of days' march distant, could carry out strategical operations introducing tactical instruction as an incident to a general plan; if, indeed, we can apply the term "incident" to the really most important feature of the maneuvers. It was necessary, under the circumstances, to assemble the troops in a single encampment, and in the different problems to send out one of the forces to a distance, to begin operations from a position that it was assumed to have reached as a result of certain imaginary strategical conditions. One objection to this lay in the fact that the command remaining in camp could obtain by inference a pretty accurate idea of the strength of the force opposed to it. But in this respect alone did these maneuvers differ materially from those held more recently. The initiative of the commanders was given the fullest scope, and neither had, in any maneuver, the slightest knowledge of the nature of the problem given to his opponent. As an evidence of this, it is, perhaps, sufficient to state that on one occasion two opposing commanders at West Point, Ky., in beginning the maneuver, marched forward each expecting to find his opponent in a defensive position, whereas the two forces met in an unexpected *combat de rencontre*. In one case, a commander having his force in camp at night, with outposts thrown out, expecting merely an outpost exercise, received orders, long after dark, to make a night march and attack at dawn a similar command in camp whose outposts had no idea that any attack was contemplated until the enemy actually appeared at daybreak. Every organization received instruction in outpost duty, the instruction frequently lasting from one day to another. I should not deem it necessary to mention these facts had not a recent article in a popular magazine contained remarks calculated to convey an erroneous impression in regard to the very successful maneuvers in Kentucky and Kansas last year.

As a result of the experience at West Point and Fort Riley, the chief umpire at those maneuvers advocated the assembling of the forces in two camps during the entire maneuvers, the force in one camp to be permanently designated as the Blue and that in the other camp as the Brown, the headquarters of the main force, with its proper guard, to be encamped at some central point and to be in telephonic and telegraphic communication with both camps. He stated: "In this manner more extended

exercises than those carried out this year would be practicable. In a tactical problem each force could move at once to its object, instead of having to proceed from camp to another point and assume that its operations started from some place other than its actual rendezvous, and each force could be kept in a greater degree of uncertainty in regard to the probable location and strength of its opponent than was possible under the conditions that have existed in the maneuvers heretofore." This plan was adopted at the Ohio State encampment at Athens, Ohio, last August. In this encampment the two brigades composing the division were in separate camps about six miles apart; the camp of the division commander, Maj.-Gen. Charles Dick, Ohio National Guard, being at a conveniently located point about midway between the two camps. In addition to the State troops assembled at this encampment there were two battalions of regular infantry, two troops of regular cavalry, and two regular field batteries encamped with each brigade. Eight regular officers, varying in rank from colonel to captain, were assigned by the War Department for duty as umpires at the Athens encampment. The maneuvers at the Ohio encampment were remarkably good and far exceeded the expectations of the most sanguine. The officers and men of the militia entered upon their duties with zeal and enthusiasm, to such an extent indeed that the review, which is an indispensable feature of every encampment, was held on Sunday in order that time might be gained for an additional maneuver. In this encampment the regular troops were under their own commander, Colonel Duggan, the detachments at the two brigade encampments being under the command of Lieutenant-Colonel Fountain, 4th Cavalry, and Lieutenant-Colonel Yeatman, 27th Infantry. As there was no legal provision for placing regular officers under militia commanders the difficulty was obviated by having the regular organizations co-operate with the militia exactly as the contingents of an allied army would do in an actual campaign—as, in fact, they really did in the Crimea and in China. The result of the maneuvers at Athens was highly gratifying, not only on account of the earnestness of the militia officers and the rapidity with which they learned, but also as an indication of the great use that can be made of such camps in preparing the militia for the more extended maneuvers in combination with the regular army. At the Ohio State encampment, it was noted with much interest that the Eighth Ohio

Infantry, which had been at the West Point maneuvers the year before, demonstrated immediately its superiority and efficiency, though before the close of the encampment the difference between the regiments was much less marked. The experience of the Eighth Ohio in this respect is simply an exemplification of the old adage, "Practice makes perfect."

At American Lake, in Washington, maneuvers were held in the month of July, the troops consisting of a division composed of two brigades under the command of Brig.-Gen. Frederick Funston, U. S. A. In this case also the brigades were in separate encampments, the headquarters of the division commander being at a central point. The force engaged in the maneuvers aggregated 4,011 officers and men, of which number 1,687 were regulars and 2,324 militia. The militia was from the States of Oregon, Washington and Idaho. Maneuvers were also held at Atascadero, Cal., the force engaged consisting of a division under the command of Maj.-Gen. Arthur MacArthur, U.S.A. The division, which was composed of two brigades, was in a single encampment, as at the maneuvers of 1903. The strength of the division was 4,428 officers and men, of which number 2,247 were regulars and 2,181 militia. The problems at American Lake and Aatascadero were similar to those at West Point and Fort Riley the year before. The maneuvers on the Pacific slope were highly satisfactory.

At Manassas, Va., in September, were held the largest and, in some respects, the most successful, maneuvers that have yet been seen in this country. The proposed plan of two encampments, which had been adopted at the Athens and American Lake maneuvers, was here carried out also. The force, under the command of Maj.-Gen. H. C. Corbin, U. S. A., numbered 5,062 regulars, and 21,234 militia, being the largest military force assembled in the United States since the close of the Spanish War. The Blue division, under Brig.-Gen. F. D. Grant, U. S. A., was encamped at Manassas; the Brown division, under Brig.-Gen. J. Franklin Bell, U. S. A., at Thoroughfare, about thirteen miles distant; and the corps headquarters were established at Gainesville, a point nearly midway between the two camps. An interesting and most valuable feature of this encampment consisted of two sustained maneuvers, each of two days' duration, the troops bivouacking on the field and resuming the operations on the following morning. It is not the intention here to give any detailed description of the maneuvers

at Manassas. They have already been reported in outline in the various service journals, and a detailed report is now in preparation by the General Staff. I will merely remark here that they were highly successful; that in some important features they marked a distinct advance on all previous encampments and that incidentally they demonstrated not only what we can copy and continue in the future, but certain defects which we should avoid if we are to continue to profit by our own experience. These matters will be touched upon incidentally in discussing the general subject.

The maneuvers in the United States have many essential points of difference from those conducted in Europe. There is much that we can learn from the European maneuvers; there are many things that we can adopt from them, and still more that we can adapt, but we must work out by our own process of evolution a system suited to the needs of our own military personnel. In Europe the troops receive, in large garrisons, extended tactical training which but few of our regular garrisons receive, and which is quite out of the question for our militia at its home stations. As a result of the conditions existing in Europe, the maneuvers there are mainly for the instruction of officers of high rank in the duties of actual field command. With us, however, the instruction must extend from the highest officers to the private soldiers; for in the militia especially, the opportunities for field instruction are limited necessarily to their State encampments or to combined maneuvers. It is essential that the militia should possess a certain amount of training, in order that the maneuvers may not be restricted to mere elementary exercises as the only alternative to plunging the state troops at once into waters beyond their depth. The criticism was made at the maneuvers in 1903, that so far as some of the militia organizations were concerned, it was like placing a lad in a university before he had finished his course of common-school studies. It is within the power of the General Government to exact certain requirements of the militia as an indispensable condition to their participating in combined maneuvers; and it may be stated as an axiom that it is a waste of public money to transport troops a long distance and at a great expense for the purpose of learning things that they can acquire equally well by going a short distance at a slight expense. No militia organization should be invited to participate in the combined maneuvers unless it has received instruction

not only in ordinary company, battalion and regimental drills, but in guard duty, the service of security and information and extended order formation. All ordinary drill can be learned by the militia organizations at their home stations; extended order drill, guard duty, and the essential principles of the service of security and information can be learned in the state encampments. Officers of the Regular Army detailed as inspectors of the militia, or, better still, as umpires at state camps for maneuvers, should report certain organizations as "qualified for maneuvers." This method would insure at the combined maneuvers troops properly qualified for instruction there to be given. It would also serve another useful end, inasmuch as it would place an official stamp of approval on the efficiency of the militia organizations thus reported.

Any person who has participated in the different maneuvers thus far held in this country, or who has been present as an interested spectator, cannot have failed to notice that one of the crying needs in our maneuvers is a greater number of umpires than we have yet had. There were at Manassas fifty-one umpires, consisting of a chief umpire at corps headquarters, and a senior umpire, and twenty-four assistants assigned to each division encampment. A body of fifty-one officers seems to constitute a considerable force of umpires; but considering the fact that the operations cover a very considerable terrain, and that everything has to be noted that pertains to the question of the efficiency of the commands under observation, it is not sufficient for two divisions of troops. I frequently heard during the maneuvers the complaint, not only on the part of the umpires, but also of the officers in command of troops, that there were not umpires enough; and very often, owing to this scarcity, a critical situation had to be determined by an umpire who arrived at the point too late to realize from his own observation the actual condition of affairs. There should be, at the very least, one umpire for each regiment of infantry, squadron of cavalry and battery of artillery. If practicable, the number of umpires should be so increased as to permit the assignment of one to each battalion of infantry and troop of cavalry. Though each umpire speaks with the authority of the commanding general, more weight attaches inherently to the decisions of an officer of rank and experience than to one of lower rank and shorter length of service. As far as practicable, the

umpires should, therefore, be field officers, and they should never be below the rank of captain. There is probably no more instructive duty that can be assigned to an officer than that of an umpire at maneuvers, and the greater the number of officers that can be assigned, within reasonable limits, for this duty, the more successful will the maneuvers be and the more will a very valuable kind of instruction be extended throughout the military service.

A comment was recently made by a writer in the *Infantry Journal* that the umpires should be limited to officers of cavalry, field artillery and infantry, the writer objecting to the detail of officers belonging to the permanent staff, to the engineers and to the coast artillery. In reply to this I will merely say that one of the very best umpires that I have ever seen was a captain of engineers, and that an equally good umpire, conspicuous for his ability in this direction, as in many others, is an officer of the coast artillery. In fact, an officer's arm of the service makes no difference, if he understands proper tactical principles and is a man of discretion, coolness, fairness and good judgment. An umpire needs peculiar qualities. It has been well said that he should not be an advocate, but should be a judge; he should be able to decide quickly, and his rapid decisions should have the qualities of manifest fairness and approximate accuracy. It is impossible for an umpire to stop and deliberate and make a mathematical calculation as to probable losses; it is necessary, if the close resemblance to actual warfare is to be attained and maintained, that the decisions should be rendered with the utmost promptness. It is not every officer who is qualified by his temperament to be a good umpire. In this connection I have in mind a certain officer of considerable war experience and of unquestioned military attainments, who is so constituted that he cannot dissociate himself from the command to which he is assigned; he would always speak of "our side" when he referred to the troops to which he was assigned as umpire; his sympathies were so keen that he constituted himself an advocate for the Blue or the Brown—according to the force to which he was assigned—and he could view a situation from one side only. Notwithstanding the undoubted military ability of the officer in question, he is totally unsuited for the duty of an umpire.

At Manassas the experiment was made for the first time of assigning umpires permanently to the two sides and having

them continually accompany the same organization. This had one feature to commend it, inasmuch as the men of the militia organization to which the umpire was attached were inclined to look upon the officer as their military "guide, philosopher and friend," and to seek and receive instruction from him in many military matters. But this one advantage was completely overwhelmed by the disadvantage that the officers quite frequently, and doubtless unconsciously, acquired a spirit of partisanship; many identified themselves completely with the side to which they were attached and, quite unintentionally, perhaps quite unconsciously, assumed the rôle of advocate instead of that of judge.

The experience of this year has demonstrated the desirability of having the troops assigned to two separate and distinct camps, but the umpires should all be at the central encampment; otherwise they are to a great measure beyond the control of the chief umpire in many cases where conference would be beneficial. If they were assembled at the central encampment it would be an easy matter for them to reach the forces with which they are to serve, when directed by the chief umpire. They could be transferred, as occasion might render desirable, from one side to another. They would be available for conference at any time, and the experience of one day could thus be utilized in the exercises given for the day following. They should not be under the control of the division commanders in any way except in the manner provided in the provisional instructions for maneuvers. At the maneuvers at West Point, Ky., and Fort Riley, Kan., last year, the umpires were assembled by the chief umpire on the evening preceding each maneuver. The problem was read and discussed, and the umpires were regularly detailed to the different commands. A forecast was made by the different umpires as to the probable course that events would take in the maneuver, and incidentally many interesting tactical considerations were brought up and discussed. So far as I am concerned personally, I do not know that I have ever learned more at any assemblage of officers than at these meetings of the umpires.

Each umpire should be furnished with a mounted orderly. This is necessary to enable him to mount and dismount and proceed readily on foot to any place where his attention is needed and which he cannot reach while mounted. At the Manassas maneuvers the umpires with the Blue were not pro-

vided with such orderlies, and, as a result, they were in many instances seriously hampered in the performance of their duties.

The umpires are charged not only with the paramount duty of making necessary decisions in the course of the tactical operations, but with keeping a record of the firing, the losses, the fatigue and, in fact, of everything pertaining to the conduct of the various organizations in the course of the day. The duty thus imposed upon each umpire is really more than one man can satisfactorily perform. The journal of the march and the record of the topographical location of the command at various periods should be performed by a lieutenant detailed from each organization and acting under general instructions from the umpire.

The difficulty of umpiring is one that can be appreciated, perhaps, only by those who have undertaken it. Officers participating in the maneuvers form their opinions from the appearance of things as viewed from their own side only, and as their views are often, quite naturally, colored by more or less prejudice, and possibly influenced somewhat by a touch of egotism, inseparable from human nature, it is sometimes found impossible to convince them that the decision of the umpire is correct. In some instances they feel, perhaps, that the umpire is unjust, and in many more they probably think that he is mistaken. They do not always reflect that the same positive, energetic and sincere views that they present to the umpire are not infrequently counterbalanced by equally positive, equally energetic, and equally sincere views from an opposing commander of equally unimpeachable character. In such a case the umpire must depend upon his own observation; or, at any rate, throw his own judgment into the scale and decide accordingly. Not only must the decision often be made under difficult circumstances, and upon the hasty reports of subordinate umpires, but it must be made promptly. An umpire would be more than human if he did not occasionally make mistakes, and he certainly would be less than soldierly if he did not acknowledge them and attempt to rectify them as soon as convinced of his error. The best umpire is not the one who makes no mistakes, but the one who makes the fewest and the least important. If an opportunity is presented for the discussion of the maneuvers, erroneous decisions of umpires can be ascertained, and in a great degree rectified; otherwise mis-

takes made on the field must stand, and all that can be done is to regret them.

Any officer who has served as umpire at maneuvers and who has also had experience in actual war must have been impressed with the fact that in the matter of the preparation of orders, marching, scouting and reconnaissance—in fact, everything up to the moment of contact—can be conducted quite exactly as it would be in actual warfare; but as soon as serious contact is made, artificial conditions arise. It is difficult to maintain the true resemblance to battle; and if great care be not exercised, the step from the sublime to the ridiculous may be short and sudden. Probably the most difficult duty that an umpire has to perform after the opposing forces have effected contact is to keep the troops from pushing forward with undue rapidity, and practically rushing the maneuver in a manner that would be quite impossible in actual battle. The umpire must to a great extent take the place of bullets; he must decide whether the condition of the terrain and the disposition of the troops are such that the attack could be made under the existing conditions, or whether the losses presumably incurred would be such as to compel the force to halt, to take cover, or to fall back. When the umpiring is satisfactory, we find certain portions of the line checked and others consequently compelled to fall back because of the uncovering of their flanks, or from various other causes, and we have very much of the swaying to and fro of the line that occurs in actual combat. The instances are very rare in military history in which an attack has been promptly developed and thrust home without the least delay or check; but this is exactly the condition that we have in maneuvers if the umpires do not efficiently and promptly perform their duties. It is doubtless very exasperating, at least extremely annoying, to an officer to find the advance of his command checked because the organization on his right or left has been ordered back by an umpire; but this is a very slight matter compared with the bitter disappointment that a commander feels in actual operations when his troops are compelled to fall back because they are unsupported by adjoining organizations.

Experiments have been made in different maneuvers in regard to actually falling troops out as killed or wounded. This has certain advantages, inasmuch as the force can see at once the degree to which it is depleted; but it has the serious disadvantage of causing the matter to look too much like play,

and the further disadvantage that the troops thus ruled out lose all further participation in the maneuver. The latter disadvantage is a serious one especially for the militia, as the number of manuevers in which they participate is very limited, and it is desirable that each individual should get as much experience as possible. At the maneuvers at Manassas the plan was adopted of having no men actually fallen out, but having the umpires carefully note the losses, inform the commanders accordingly, and keep in mind the constructive losses as affecting the morale and the physical power remaining in the organization. Neither plan is altogether satisfactory, but the latter is doubtless the better one.

It would seem desirable, however, to have one day of the maneuvers devoted especially to the work of the hospital corps. To this end the method finally adopted at the last Fort Riley maneuvers, after much careful experiment, seems well adapted. Before the beginning of the day's maneuver a certain number of men in each troop, battery and company were marked with diagnosis tags indicating certain wounds; and when in the course of the maneuvers it became necessary, under tactical conditions, to fall out soldiers as wounded, they were selected from the tagged men. The men thus fallen out remained on the ground and were cared for by the members of the hospital corps according to their supposed wounds. The difficulty experienced in former maneuvers of having the hypothetically wounded remain on the field instead of quietly slipping back to their commands without authority, or straggling back to the rear in a way quite miraculous for disabled soldiers, was obviated by causing it to be known that a hot luncheon and a ride back to camp in ambulances awaited the supposed victims of imaginary bullets. Any person who saw at the Fort Riley maneuvers the practical working of the Medical Department, from the firing-line back to the field hospital, could not fail to be impressed with the value of the instruction, and with the earnestness and efficiency of the hospital corps. In *every* maneuver first-aid stations, dressing stations and field hospitals should be established; but I think the falling out of the men as wounded should be limited generally to a single day of the operations, and that even a single day should be devoted to this purpose only because of the great value of the instruction thus afforded to the hospital corps.

A table of fire losses has been prepared with extreme care,

but it is very rarely that it can be used. In an artillery duel or in a prolonged fire fight at long range the table can be conveniently used; but generally time does not admit of anything like calculation; the action must be kept moving; "snap judgment" must often be taken, and it is in this regard, perhaps more than in any other, that the experience of an umpire is valuable; for, while a prompt decision is more imperative than an accurate one, the decision should, if possible, be both prompt and accurate.

One most valuable feature of maneuvers lies in the fact that they accustom officers to the employment of troops according to actual conditions, which often cannot be met with definite rules. For instance, nothing is more clearly and indisputably set forth *as a general principle* than that artillery should be used in masses, that its fire should be concentrated, and that it should promptly utilize its superior range against other arms. Yet, while in the open terrain at Fort Riley artillery can be used exactly "according to the books," and good targets can sometimes be made at 6,000 yards, on the other hand, an instance was known in the broken and wooded terrain of West Point, Ky., of an artillery duel beginning at considerably less than 2,000 yards, as the guns of neither force could come into action at a greater distance; and both at West Point and Manassas it happened more than once that batteries even had to be divided as the only alternative to not using the guns at all. It may be said that maneuvers not only keep an officer remembering, but set him to thinking.

Much difficulty has been experienced in determining accurately the objective of the artillery fire. This was first sought by the display of a flag designating by its color the arm upon which the fire was directed. Afterward, two flags with staves of different height were adopted, these flags being placed in a line pointing toward the object. But it has been found that in a broken and wooded terrain even this arrangement is not satisfactory. It is possible that the difficulty may be solved by the use of heliograph signals or flashes from acetylene lamps.

There are always present at maneuvers certain observers who are very ready with their criticisms, but who, perhaps, do not have an opportunity of observing what is done in regard to matters that strike them as absurdities or, perhaps, as impossibilities. I recall a severe and sarcastic comment that was made by an experienced officer who was a spectator at

one of the minor maneuvers at Fort Leavenworth some years ago, in which a force of cavalry charged upon some infantry thoroughly ensconced behind a stone wall and delivering a heavy fire. He was aware that the operation was an absurdity, but it transpired that he did not know that the cavalry had been immediately ruled out of action; nor did he know that in the subsequent discussion the offending commander had been subjected to very severe criticism. Tactical absurdities will occur in a greater or less degree at almost any maneuvers; it may be said, also, that they occur in almost every battle, but in the latter case the offending officer escapes censure if the general result of the action is satisfactory, or, perhaps, receives a brevet for his gallantry, without any comment upon his stupidity. Moreover, the supposed "impossible" movement may be brilliantly possible. When Napoleon, at Samosierra, sent Krazinski's Polish lancers in a headlong charge up the causeway against the Spanish artillery and infantry which swept the pass with an apparently annihilating fire, he performed a tactical feat which might not be judged possible at maneuvers, but which terminated so successfully that it has well been characterized by Napier as "a felicitous example of intuitive genius." If Lord Cardigan had made the charge of the Light Brigade at maneuvers we can well imagine what comments would have been made by any sane umpire. Yet a nation applauded and a poet sang of it in immortal verse that will never be forgotten so long as brave men bear arms.

A comment that I have often heard in regard to maneuvers is that men are allowed to charge over ground under a fire which in actual battle would sweep them out of existence. Now, in point of fact, we know that troops *have* often moved over clear ground under a very heavy fire and that they were *not* swept out of existence. If Pickett's charge at Gettysburg had been made in a maneuver an umpire allowing the command to reach the Federal position would have been subjected to a very severe criticism, yet we know that Pickett did actually reach the position and that the fire did not sweep him out of existence, but that it was the hand-to-hand conflict and counter attack that caused his charge to be unsuccessful. I have, in some instances, permitted infantry to move over ground where I thought the fire was one which in actual warfare they could hardly be expected to endure; but I believed it better to

permit this than to inculcate, possibly, the idea in the minds of the infantry that the moment they are subjected to a serious fire their attack must fail. If, in time of actual warfare, the fire is more than they can endure, they will discover it quickly enough without any preliminary intimidation.

Perhaps the most frequent and most embarrassing question propounded to an umpire is in regard to victory or defeat. Not only the participators but the observers are anxious to know "which side licked." Such decisions should not be made, and there are very cogent reasons for withholding them. In actual warfare the use of bullets frequently produces results that can not be foreseen in maneuvers. A terrain which, generally speaking, is open, may have sufficient undulations to furnish very considerable shelter to a command from a fire which, under a careful but hasty inspection, would seem to have a full sweep. Moreover, the all-important element of morale cannot be taken into consideration. Probably no army ever existed in which the organizations were all of equal morale. Even Cæsar's Army had its conspicuous Tenth Legion, and Napoleon's Army had its Old Guard. It is probable that two armies were never engaged, since warfare was known, under circumstances such that the morale of each was equally high. Yet in maneuvers it is impossible to form an estimate of the relative morale of the opposing forces or of the different organizations of the same force, and even if it were possible the distinctions, if announced, would be very invidious. As a result, the umpires have to proceed on the assumption that all the organizations engaged are of equal and perfect morale, a condition which could not exist in actual warfare, and which would very seriously affect the question of victory or defeat. If the first battle of Bull Run had been a "maneuver," the chief umpire would have been compelled to sound the cessation signal in the close conflict on the Henry House plateau. The Union troops, somewhat intermingled and confused, would have been in good morale; Tyler, who had joined hands, so to speak, with Hunter and Heintzelman, would have presumably been supporting the attack properly; and no disaster would yet have ruled the batteries of Ricketts and Griffin out of action. On the other hand, Evans' brigade would have been ruled out, Bee's and Bartow's brigades would have followed, and it would have been a sagacious umpire indeed who would have awarded the victory to the Confederates. Again, could any umpire

have foreseen the decisive result of Jackson's attack at Chancellorsville? True, the 11th Corps had been routed, but the situation of Jackson's corps when the force of its attack had been spent has been well characterized as a desperate one. Its front and right flank were in the immediate presence of about 25,000 Union troops and its left flank in danger of an assault by Meade and Reynolds with 30,000 more. These troops were all in good morale and under able corps commanders, and no umpire could have foreseen the personal demoralization of Hooker which was the deciding influence in the battle. Torgau looked dismal enough for Frederick before the fortunes of the fight changed; and Marengo at one period of the battle gave very little promise of being one of Napoleon's most brilliant victories. History is replete with examples of commanders who have successfully extricated their armies from apparently hopeless situations, and while it is a very easy matter for the historian to say that General Blank *was* defeated, it would be a totally different matter for an umpire to say that General Blank *would have been* defeated. Moreover, the ablest generals sometimes make mistakes, and there is no commander so great or successful that the history of his exploits does not show that he has committed errors. In the course of a long campaign these errors are remedied and very often when they are made their effect is neutralized by greater errors on the part of his opponent. If, then, victory or defeat were announced in an engagement fought with blank cartridges, not only would it be impossible to make a decision whose justice could not be challenged, but the startling headlines in the daily press would give a maneuver defeat such prominence that it might injure a commander as much in popular estimation as though he had lost an actual battle. I have never seen a maneuver in which I did not have very decided views as to the probable result of the action if war conditions had existed, but the matter is involved with so many possibilities, so many things might happen, so many unforeseen influences might come into play, that I have felt that a positive decision of victory or defeat, without many qualifying conditions, would be at the same time a display of professional arrogance and possibly an irreparable injustice to the commander concerned. All that can be done with justice is to comment upon the plan of a commander as shown by his orders; to criticise the manner in which the plan was executed; to note tactical sins of omission and commission, and to set forth the

conditions existing at the close of the maneuvers, which, from the very nature of things, must be terminated when the opposing troops get into close contact.

A well-trained corps of guides is necessary for maneuvers and for the purpose of providing such a corps, two troops of cavalry should be sent to the maneuver district at least a fortnight before the beginning of the maneuvers and should be made thoroughly familiar with all roads, trails and topographical features, so that each trooper may become a reliable guide. It may be said that in time of war such a corps would not be available. That is true, but in time of war, guides can be impressed and means can be found to make them serve; but the application of "the water cure," for instance, is quite impracticable in time of peace for many reasons even more cogent than those arising from abstract considerations of humanity.

At Fort Riley, Kan., in 1902, and at West Point, Ky., and Fort Riley, Kan., in 1903, each maneuver was followed as soon as practicable by a discussion, to which all the officers of the command were admitted. In this respect our system has varied greatly from that in vogue abroad, and it is believed that it *should* differ from the European plan. In Europe the troops participating in the maneuvers are all trained soldiers; and they have but little to learn in regard to the tactical ieatures, so far as the smaller organizations are concerned, that they cannot reasonably be expected to have acquired in the smaller tactical exercises incidental to their garrison trainfng. It is an easy matter for the commander-in-chief, perhaps the sovereign of the nation, to assemble his highest officers and give them his comments briefly after the conclusion of the maneuvers. Manifestly, this plan would not do for us, for the great mass of our officers who need the instruction would be left out of consideration. At Manassas circumstances rendered it impracticable to assemble the officers for discussion, and much regret has been expressed because such was the case The object of the discusssion is three-fold: In the first place, a large map being provided when the narrative of the operations is read, each officer concerned is enabled to see clearly the part that his organization was performing in the general scheme. He gets, in fact, a brief and clear history of the maneuver. Another advantage gained by this method lies in the fact that errors committed are commented upon, and not

only the officer committing them, but those who hear the criticism, profit by the mistakes that were made; and it may here be stated that it is by the mistakes made at the maneuvers that we learn more than we do by the things that are perfectly performed. Another advantage gained by the discussion is that any statements made in the report of the chief umpire can be at once challenged; that opportunity is offered for explanation and for clearing up doubted points, and that the report of the chief umpire can accordingly be amended so as to make it as nearly accurate as it is possible for a human report to be. At Manassas, discussion being impracticable, a militia officer may have made a mistake on the first day of the maneuvers, may have repeated it on each of the three succeeding days, and may have gone back to his State without being aware that he had made any mistake at all. Where it is not practicable to assemble all the officers for the discussion, it is at least desirable that all general and field officers, and, if possible, company, troop and battery commanders be assembled. At Athens, Ohio, although the two camps were some six miles apart, arrangements were made for special trains to carry the officers of the different camps to the assembly tent at headquarters. I believe that this could generally be arranged, and that the additional expense incurred would be amply repaid by the additional instruction gained by the officers. It is not a sufficient objection to this plan to state that it does not agree with the European system, though, for this matter, the comments of European military attachés seem to imply that they appreciate the superior value of our method. At any rate, our object is to instruct our troops in the most practical way; if it accords with the European conditions, well and good; if it does not agree with such conditions, that should be a matter of no great concern to us, if it properly fulfils the desired object. We should carefully determine what it is desirable to teach, and then proceed with the instruction in the most direct and practical way.

In the course of the maneuvers that I have attended, certain prominent characteristics of the National Guard have strongly impressed me. In the first place, I have observed with much satisfaction their almost universal zeal and desire to learn. Their shortcomings have naturally been those which it is the object of the maneuvers to remedy. In the beginning their officers, as a rule, show but little skill in taking advantage of

the different features of the terrain for tactical purposes, especially in regard to utilizing natural cover; they are too prone to adhere to normal formations; their advance-guard work is over-cautious and their attack generally too precipitate. The fire discipline of the militia has in the main been surprisingly good, but not enough attention has been devoted to the estimation of ranges and the adjustment of sights. I have noticed, however, a marked improvement, from day to day, in these respects in the troops at each of the maneuvers that I have seen. I have observed with much pleasure a marked improvement in the militia in another respect. What the exact source of the Satanic inspiration may be, I do not know; but some young men in the National Guard—relatively few, but positively considerable—seem to think that a camp means a "lark;" that it is soldierly to be tough, and that it is "smart" to rob hen-roosts and apple-orchards. This spirit is happily diminishing rapidly, and at Manassas such depredations were practically unknown. I am confident that the evil can be banished utterly, but I believe that this can best be done by the officers representing the matter in a proper light to their men rather than by resorting to punitive measures. If it be clearly impressed upon the men that they are practically the guests of the people whose homes are in the maneuver district and that they are accordingly under moral obligations to cause the inhabitants no annoyance; that in their conduct, as in their military efficiency, they should not suffer by comparison with the regiments from other States; and that such boyish pranks are regarded by experienced soldiers as mere evidence that the perpetrators are greenhorns or "rookies," I believe that there will be but little occasion to resort to measures of discipline to check any tendency to mischievous marauding. It is rarely that a suitable appeal to the pride of men is in vain.

The question naturally arises as the one of paramount importance, What is gained by these maneuvers, and do they furnish an adequate return for the great expense incurred? As a reply, I will quote *verbatim* from my report on the maneuvers of 1903:

"There are many things that cannot be learned by the most intelligent and diligent students of books, which are readily acquired in practice on the field. The formulation of orders, the arrangements for marches, scouting and reconnaissance and the deployment of forces for battle can be conducted in peace

maneuvers almost exactly as they would be in the serious business of actual war. On the part of the militia still more is to be learned. I am sure that there was not a National Guard organization present at West Point or Fort Riley that did not leave the encampment with clearer and better ideas of camp sanitation than when it arrived; and this point alone may, perhaps, ultimately repay, to the fullest degree, all the expenses of the maneuvers; for even if the National Guard should not participate as organized bodies in our future conflicts, it is more than probable that if war should come within the next decade most of the militia officers present at the maneuvers would hold commissions as officers of volunteers. If, in the war with Spain, all the volunteer officers or even a considerable portion of them, had known as much about camp sanitation as the militia officers learned at West Point and Fort Riley, the result would have been a great saving of life and a greater efficiency of the commands at Chickamauga and Camp Alger.

"But this is not by any means all that the National Guard learned at these maneuvers. There are innumerable details relative to camps, marches and bivouacs which they learned from their association with regular troops, and this instruction is conveyed, not only more forcibly, but I may say more palatably than if it were imparted by a regular inspector at a State encampment. I have reason to believe that in many cases the wholesome advice and candid criticism of such inspectors have been met with the feeling that the criticism was too exacting, perhaps that it was inconsiderate and faultfinding, and that the things desired, while practicable on the part of regular troops, could not reasonably be expected of militia. In many cases, on the other hand, I believe that regular officers at State encampments have, through a spirit of kindness, politeness, or a desire to avoid hurting the sensitiveness of their hospitable hosts, refrained from making plain criticisms that should have had a wholesome effect. Moreover, in the State encampments, be the militia good, bad or indifferent, it is not stimulated by the consciousness of being superior, nor spurred on by the evidence of being inferior, to other organizations. At the combined encampments the necessity of advice or criticism is reduced to a minimum, for the great majority of militia officers are intelligent and ambitious, and at these encampments they can see for themselves; they can make their own comparisons, see with their own eyes, and judge by their

own common sense how they stand relatively to other organizations—whether Regulars, who have greater opportunities than they to attain military proficiency, or other National Guard organizations which possess no advantages greater than their own. In this connection I recall, with much satisfaction, the excellent condition of the camp of the First Wisconsin, at West Point, which furnished a fine object lesson to all the militia officers who saw it.

"Another great advantage derived by the militia from these maneuvers lies in the fact that the officers and men of the National Guard have strongly impressed upon them the fact that drill, although a most necessary preparation, is, after all, *merely* a preparation for the ultimate duties of a soldier. The necessity of scouting, of varying normal formations according to the condition of the terrain, of utilizing cover, of exercising fire control, and of 'getting there' in the quickest, most sensible and effective manner, was presented to the officers of the National Guard in a way that would have been impossible without practical participation in such maneuvers. I recall with some amusement, not unmixed with sympathy, the keen disappointment of a militia regiment in being in a maneuver of considerable proportions and not firing a shot during the entire day. Possibly it occurred to some of these men for the first time in their lives that a regiment may hold an important point and play a necessary part in a general plan of battle without losing a man or killing an enemy. Possibly it was impressed upon them that duty is duty, and that 'they also serve who only stand and wait.'"

The maneuvers give to the officers of the higher grades valuable experience in the command of large bodies of troops under a close approximation to the conditions of actual war; they accustom officers of all ranks to accommodating their tactical dispositions to unforeseen and varied contingencies, and in this respect their value is beyond estimation, for with new troops disaster has rarely been because of a lack of courage, but has often arisen from the bewilderment of inexperienced officers suddenly placed in a novel situation. They teach the men to take care of themselves in camp and on the march and give them a taste of real military conditions; and they give officers of the staff departments valuable experience in field administration, logistics and supply. Everything duly considered and weighed, I have no hesitation in saying that much

is learned at these maneuvers by everybody participating therein, and that in case we should be involved in war it would be found that the experience gained by our officers in maneuvers had been of so much value as to repay the government with heavy interest for the expense incurred.

Carefully considering the experience gained at past maneuvers, the following general features seem desirable in maneuvers in the future:

1. Only those militia organizations should be invited that have been duly declared "qualified for maneuvers." This qualification should embrace a knowledge of company and battalion drills, guard duty and a reasonable degree of preparation in the service of security and information, and extended order formations.

2. The troops at maneuvers should consist of two full divisions, complete in all arms of the service. A smaller force would not furnish the desirable opportunities for command on the part of general officers, and a larger force would, at least for the present, be too cumbersome to admit of the detailed instruction which must be carried out in our militia so as to obtain the full measure of benefit from the maneuvers.

3. The two divisions should be formed into a provisional army corps, but each division should occupy a separate camp, at a distance, if practicable, of at least ten miles from the other. Each camp should be formed and guarded as though it were in close proximity to the enemy. The corps headquarters should be at a separate encampment as nearly as practicable midway between the two divisions. Everything connected with each encampment should approach as closely as possible to the conditions of actual war.

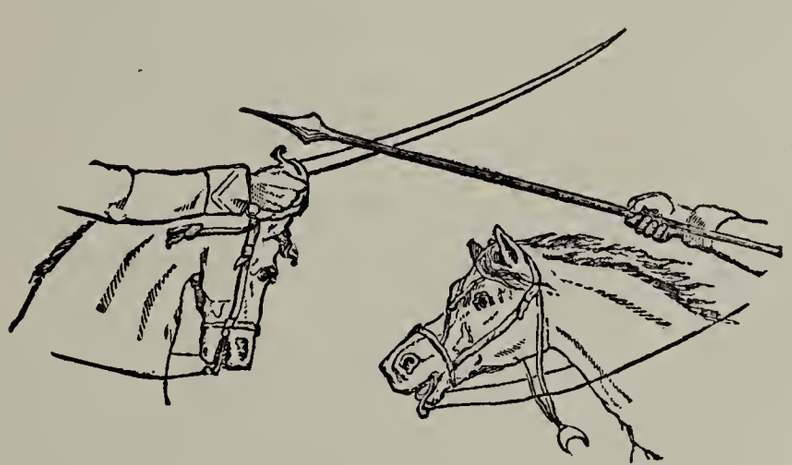
4. There should be an interval of at least one day between the maneuvers, even if such maneuvers be of several days' duration. This time could be utilized in giving the troops a much-needed rest and in enabling the umpires to complete their reports. As soon as practicable after the conclusion of the maneuver, and certainly before the close of the encampment, there should be a discussion of the maneuvers, at which as many officers as practicable should be required to be present. This discussion should embrace a concise narrative of the operations, including the orders of the opposing commanders, and should be followed by the comments of the chief

umpire, after which any officer desiring to make any correction or explanation should be allowed to do so.

5. The umpires should all be encamped at corps headquarters, where they should be under the immediate orders of the chief umpire. They should be on the ground at least two weeks before the beginning of the maneuvers, during which time they should familiarize themselves with the geography and topography of the maneuver area, with the nature of the proposed problems, and with the duties of umpires.

6. It should be remembered that we are engaged in working out a system of practical maneuvers suited to our own needs. We must learn mainly from our own experience. Free comment in proper form should be encouraged on the part of all officers participating in the maneuvers, and no feature thereof should be held too sacred for respectful criticism or comparison with other maneuvers at home or abroad.

I can not better close this paper than with a quotation from a letter that I recently received from an officer whose rank gives weight to his words and whose recognized ability commands respect for his opinions: "We can improve very much upon the European methods of conducting maneuvers. Americans are much more adaptable than Europeans, and much more ingenious in devising new methods. We have shown this in all our wars, and if we apply our ingenuity to the maneuvers in time of peace we can save ourselves many of the disasters of the first months or years of future wars. This kind of experimental science is especially attractive to the American mind, and we can outstrip the Europeans before many years, even if we have to make up our forces from troops who have had less training."



LAND DEFENSE OF SEACOAST FORTIFICATIONS.

By Captain EDWARD H. SCHULZ,
Corps of Engineers, U. S. Army.

IT is only within recent years that the land defense of our seacoast fortifications has received extended study. Our older fortifications made provision against land attack, but since the installation of modern armament, emplaced in concrete constructions, the matter has been held in abeyance. This is partly due to the fact that our resources and energies have been used in providing the armament itself, which is of recent growth, beginning practically in 1890. During the short space of time that has elapsed, upwards of 800 seacoast guns and mortars have been emplaced.

EXTENT AND COST OF OUR MODERN ARMAMENT.

The Chief of Engineers, in his annual report for 1904, cites the following:

"Up to the present time projects for permanent seacoast defenses have been adopted for thirty-one localities in the United States, as follows:

1. Frenchman Bay, Me.
2. Penobscot River, Me.
3. Kennebec River, Me.
4. Portland, Me.
5. Portsmouth, N. H.
6. Boston, Mass.
7. New Bedford, Mass.
8. Narragansett Bay, R. I.
9. Eastern Entrance to Long Island Sound
10. New York, N. Y.
11. Delaware River
12. Baltimore, Md.
13. Washington, D. C.
14. Hampton Roads, Va.
15. Entrance to Chesapeake Bay at Cape Henry
16. Cape Fear River, N. C.
17. Charleston, S. C.
18. Port Royal, S. C.
19. Savannah, Ga.
20. St. John's River, Fla.
21. Key West, Fla.
22. Tampa Bay, Fla.
23. Pensacola, Fla.
24. Mobile, Ala.
25. New Orleans, La.
26. Galveston, Tex.
27. San Diego, Cal.
28. San Francisco, Cal.
29. Columbia River, Ore. and Wash.
30. Puget Sound, Wash.
31. Lake Champlain

"In addition to the above localities, the defense of the Great Lakes and the St. Lawrence River is under consideration.

The seacoast defenses of the United States are now somewhat more than 50 per cent. completed. Twenty-five of the

principal harbors of the United States have a sufficient number of heavy guns and mortars mounted to permit an effective defense against naval attack, and during the past four years considerable progress has been made in the installation of an adequate rapid-fire armament, now the matter of first importance.

"*Gun and Mortar Batteries.* The existing projects for sea-coast defenses comprise 364 heavy guns of 8-inch, 10-inch and 12-inch calibers, 1,296 rapid-fire guns from 2.24-inch to 6-inch caliber, and 524 mortars. The total cost for the engineering work is estimated at $50,000,000, including what has been completed as well as what remains to be done.

"The appropriations for gun and mortar batteries from 1890 to 1904, inclusive, amount to over $28,000,000.

"The status of emplacements for which funds have been provided is as follows, at the close of the fiscal year:

	12″	10″	8″	Rapid-fire	12″ mortars
Guns mounted	93	119a	93b	185c	350
Ready for armament	8	8	3	250d	14
Under construction	4	6	..	152	12
Total	105	133	96	587	376

a. Including original experimental 10″ carriage.
b. Twenty-three of these, which have been mounted temporarily, have since been dismounted.
c. One temporarily.
d. Including seventy 6-pounders not requiring permanent emplacements.
At the close of the previous fiscal year there were reported mounted:

12″	10″	8″	Rapid-fire	12″ mortars
80	112	89	108	297"

Projects for the defenses for San Juan, Porto Rico; Pearl Harbor and Honolulu Harbor, Hawaii; San Luis d'Apra, Guam, Manila Bay, Subig Bay, have been approved by the Secretary of War, and actual construction should begin thereon at an early day.

In addition to the above, projects for the defense of Cebu and Iloilo, P. I., have been submitted, and projects for defense of our naval coaling stations are under consideration,

It is thus seen that the armament already provided is of immense value, and forms practically a complete defense of our seaports and adjacent cities. The loss in prestige, not to mention the actual loss of armament, would therefore emphasize the great importance of adequate land defense. When

we add to the above the auxiliaries of defense, such as range-finder stations, searchlights and torpedoes, the folly of not thoroughly defending them from land attack is evident.

At the present time sixty-six fire and battery commander stations are in use by the artillery, and seventy-seven are under construction, representing a cost approximating $500,000. This is but a beginning of our range-finder system.

The torpedo defense is in charge of the artillery arm, and its material, including loading-rooms, storehouses, range stations, presents an aggregate value, when fully equipped, of over three million dollars.

We thus see a sum of over thirty million dollars has been expended in our coast-defense system, and probably as much remains to be expended to complete the system. The defenses are in a high state of efficiency, able to render good service and give excellent account of themselves in any action with the enemy afloat.

The permanent defenses have now reached that degree of completion where the rear defense becomes of paramount importance, and this has been recognized by the War Department, which has now the land defenses of all our seacoast fortifications under consideration. Projects for land defense have already been considered for the most important harbors.

The seacoast fort or battery has a double problem to solve:

(*a*) It must fight the enemy's vessels, destroying them if possible. (*b*) It must be defended from land attack in the rear, or from landing parties attacking from any direction.

The discussion of an engagement with the enemy on the water may be omitted, as all our emplacements are designed to give the maximum efficiency in such an engagement.

Our heavy guns can, however, fire only to the front, with a possible fire of the flank guns to 20° behind the line of gun centers, while to the rear they have no fire.

The rapid-fire guns, in which we may include the 6-inch, 5-inch, 4.7-inch and 3-inch in permanent emplacements, have in some special forms of emplacements fire to the rear, but generally we may consider them as limited to front and flank fire with the exception of the 3-inch. All the rapid-fire guns can and should be used in repelling land attack in the directions of their fields of fire.

The guns of greater caliber can not be so considered, as their rate of fire, speed of laying, etc., would preclude their efficient use. For such an attack the rapid-fire guns would be more effective, and should be provided. It may be stated that, in addition to the above rapid-fire guns, the 6-pdr. (2.24-inch) is also considered a gun of the permanent defense. This gun is now provided with a rampart mount; it is, however, the intention to give it a permanent pedestal mount.

In considering the nature and extent of the land attack, several important considerations must be taken into account:

1st. The value of the harbor or city and of the particular fortification in its defense.

2d. The character of the enemy, and his distance from base of supplies.

3d. The characteristics of the coast, as to feasibility of landing, and intermediate territory to be traversed.

The following may be considered as self-evident:

1st. The enemy will not hazard to force the entrance to our harbors in daylight in the face of our present strong fortifications.

2d. He will not engage our batteries for the purposes of combat; if he engages them at all, it will be mainly for purposes of reconnaissance.

3d. He will not engage the batteries at any time except when the odds are greatly in his favor.

4th. His first object will be to capture the batteries and injure the armament beyond use, or else employ them in attacking other batteries, and this will be attempted entirely by land attack.

We thus see that the importance of land defense is as great as the necessity for the permanent defenses themselves.

Let us now ascertain the character of a land attack, involving as it does the number of troops and their equipment. The complement of a first-class battleship is about 700, of a first-class cruiser the same, and of the minor vessels proportionately less. Considering a European fleet, maneuvering in the vicinity of one of our harbors, consisting of 2 battleships, 3 first-class cruisers and about 8 to 12 vessels of minor size, the total complement would be about 6,000 men; of this number half might be available for a sudden dash against the batteries. The enemy, thus numbering about 3,000 men, would proceed, in light-draft torpedo-boats, launches or ship's boats,

under cover of darkness or fog, through unfrequented channels, carefully picking their way over suspected mine fields, and make a landing in the rear of the works, or at some distance on the flanks. In any case, the objective would be to land the greatest number of troops in the safest and most expeditious manner and as close to the works as possible, and then proceed over land to attack and capture the work. The attacking troops would be provided with their own service rifles and in addition would probably land machine, field and rapid-fire guns up to 3-inch caliber, and in exceptional places as heavy a gun as 5-inch or other siege guns. The facilities for landing must in the latter case be exceptionally good.

Having made the landing, attack or capture would be certain unless our batteries were protected by proper land defense, for it cannot be assumed that the artillery personnel of the battery will be able to cope with an attack in the rear as well as continue a fight with the enemy on the water, and this especially if no provisions for immediate rear defense are available.

The character and type of armament which would accompany a determined landing party are shown in Appendix I.

The following data of United States Navy guns are of interest:

The caliber 30 Gatling 10-barrel gun carries two ammunition boxes on the carriage—total number, 1,320 rounds.

The Colt gun carries, 2,000 rounds. These guns have tripod mounts. The limbers carry 12,000 rounds.

The 3-inch rapid-fire field gun, 23-caliber, weighs 400 pounds. Muzzle velocity, 1,250 feet per second. Total weight, with 32 rounds and carriage, is 1,830 pounds. The 3-inch projectiles are shrapnel, thin shell, $\frac{2}{10}$-inch, cast-iron head, 135 balls, $\frac{1}{2}$-inch diameter. The bursting charge is 3 ounces and the firing charge is 250 grammes, equal to .55 pounds for 23 caliber. For a 50-caliber the charge is 5. pounds with 2,800 feet per second muzzle velocity.

SMALL ARMS.

The various types are: The German military rifle, .311 caliber; English—the Enfield, .303; French—Mossin, .30; United States—Krag-Jorgensen and Springfield, .30; Japanese—30th year 1900, .256; Russian—3 line 1891, .30.

A comparison of the new Springfield rifle with others is shown in Appendix II.

The protection required against modern Springfield and similar types is as follows:

Sand, 2½ feet.
Earth, 3¾ feet.
Soft wood, 5 feet.
Hard wood, 2½ feet.
Wrought iron, ⅝ inch.
Hardened steel, 5-16 inch.

The characteristics of British field artillery are shown in Appendix III, and of United States field artillery in Appendix IV.

From the tables quoted we note the following characteristic approximate penetrations at muzzle:

Service rifle, caliber 30, 3 feet earth, 2½ feet sand;
United States field gun, 3-inch, model 1898, 4.5-inch steel, 13 feet sand;
United States siege, 5-inch rifle, model 1898, 6.2-inch steel, 18 feet sand.

For calibers over one inch, the relative protections afforded may be taken as follows:

1 of W. I.=5-6 of steel=30 of sand=36 of earth.

It will be seen that for absolute penetrations, unwarranted thickness would be required against field and siege rifles. As, however, these guns are seldom used for direct penetration, but rather for their shell and shrapnel fire, a protection of 6 feet of earth is considered ample; consequently in designing field works 3 feet of earth would be sufficient against small arm fire, and 6 feet against all others.

The above list of guns includes not only the recognized field guns of various navies, but also some of the rapid-fire ship's mounts, which at any time might beutilized for shore service. In addition, the field guns of Great Britain and the United States are also given. It is reasonable to expect that in any serious war the enemy's army guns would be utilized where possible in the land attack of our seacoast defenses.

The effective range of the service rifle may be taken at 1 mile; of the field and rapid-fire guns, at 3 miles, and the siege rifles and howitzers at about 4 miles.

In planning our field works, then, they should be at such distances as to prevent the enemy from occupying positions within ranges of our permanent fortifications, as above given.

As a land attack would hardly be undertaken without field

and rapid-fire guns, we may consider the zone of danger to be generally taken as three miles, and for important harbors or where landing of siege guns is especially favorable, a radius of four miles.

The weight of the 23-caliber United States Navy field piece, 3-inch, with carriage, etc., is 1,830 pounds. Of the United States 5-inch siege rifle without carriage, about 3,630 pounds. Of the British 5-inch howitzer, carriage and limber, 5,040 pounds, and proportionately less for the several parts.

We thus see that the heaviest single weights to be brought ashore would not exceed about 3,600 lbs., an operation which, while almost impossible in certain localities and weather conditions, yet with favorable circumstances one which an enterprising enemy would readily attempt.

The table shown in Appendix IV gives the various United States guns which are available in defense against land attack.

In addition to the above, the following movable guns have been recommended by the Board of Ordnance and Fortification to form part of the coast defense armament, and therefore are peculiarly available in the scheme of land defense:

1. Automatic 1-pounder on wheeled mounts.
2. Semi-automatic rapid-fire guns on mobile broad-tired field carriages of the minimum caliber that will give an effective shrapnel, believed to be not less than 7½ pounds. (For convenience this gun will be designated in this paper as 7½-pounder.)
3. Caliber .30 automatic machine guns on combined tripod and wheel mounts.

In the scheme of land defense the above field and movable guns may be roughly grouped as follows:

Howitzers, 7-inch B. L.
Siege rifles, 5-inch B. L.
Siege howitzers, 5-inch B. L.
Siege mortars, 3.6-inch B. L.
Field guns, 3-inch, 3.2-inch and 3.6-inch and the new 3-inch Ehrhardt gun.
Semi-automatic, 7½-pounder.
Automatic machine, caliber .30.

It is manifest that the regular coast artillery will be insufficient to properly care for the land defense. Their time and labor will be taken entirely in looking after the naval attack. In an emergency they must also take part in the immediate defense against attack from the rear.

Our main reliance must, therefore, for the preliminary defense, be placed on the organized militia of the various States, who are fully prepared to act in such an emergency.

The following is from the essay of Col. Edward E. Britton, National Guard, New York, on "The Training of the Organized Militia," published in THE JOURNAL OF THE MILITARY SERVICE INSTITUTION, January–February, 1904:

"The returns of the organized militia of the United States for 1902, show the aggregate strength to be 118,259, of which there were Engineers, 1,045; Cavalry, 4,951; Coast Artillery, 2,828; Field Artillery, 4,707; Infantry, 101,537; Signal Corps, 834; Hospital and Ambulance Corps, 1,206. The new militia law contemplates that all of these may, if needed, be ordered into the service of the United States as militia to serve a period not exceeding nine months, within the confines of the United States. But setting aside the fact that the constitutions of some States require the maintenance within the State of a specified number of troops, it would be contrary to public safety to withdraw all the troops from their respective States, where some of them should remain for State purposes.

"In New York State the 13th Regiment Heavy Artillery, nearly 1,200 officers and men, could efficiently handle coast defenses against an enemy at any time. In Massachusetts the 1st Heavy Artillery deserved and received high praise from the United States officers for its work in maneuvers on the New England coast. Connecticut and California are engaged in organizing additional coast artillery forces. Rhode Island, South Carolina, Georgia and Mississippi, have made a good beginning."

The total organized strength, determined by special inspection made in pursuance of General Orders No. 49, April 1, 1903, was as follows:

STATE	STRENGTH	STATE	STRENGTH
*Alabama	3,318	**Montana	538
**Arizona	382	**Nebraska	1,588
**Arkansas	1,731	**Nevada	140
*California	3,480	*New Hampshire	1,319
**Colorado	1,082	*New Jersey	4,651
*Connecticut	2,572	**New Mexico	371
*Delaware	389	*New York	13,870
*District of Columbia	1,294	*North Carolina	1,850
*Florida	1,291	**North Dakota	806
*Georgia	4,684	**Ohio	5,677
**Idaho	449	**Oklahoma Territory	874
**Illinois	6,669	*Oregon	1,262
**Indiana	2,297	*Pennsylvania	9,068
**Iowa	2,364	*Rhode Island	1,025
**Kansas	1,320	*South Carolina	3,692
**Kentucky	1,261	**South Dakota	1,335
*Louisiana	1,498	**Tennessee	1,915
*Maine	1,158	*Texas	3,266
*Maryland	2,006	**Utah	376
*Massachusetts	5,739	**Vermont	701
**Michigan	3,031	*Virginia	2,271
**Minnesota	2,026	*Washington	822
*Mississippi	1,140	**West Virginia	1,140
**Missouri	3,078	**Wisconsin	2,857
		**Wyoming	360
	54,258	Total	116,033

*Seacoast, 23 states, 71,665
**Inland, 26 " 44,368

116,033

From the above we see that the coast states militia numbers 71,665 and the inland states 44,368. We may assume that the militia from the inland states will not be immediately available, and that only three-fourths of the coast militia will be assigned to coast defense; this would be about 52,000 men, or say about 500 companies, practically all infantry. A portion of these troops would have to act as engineers and cavalry and artillery, not considering the hospital and signal troops required.

Taking one of our large, important harbors, the quota assigned to it may be taken as 5,000 men. Dividing such a harbor into, say, five fortified posts, it is seen that probably 1,000 men, or 10 companies, could be assigned to it. Continuing this theoretic analysis, and assuming an approximate straight coast line in the vicinity of the post, the semi-circle at a distance of 3 miles would be about 10 miles. The 1,000 men being divided into reserve and advance lines, say half and half,

there would be something like 500 men for a front of 10 miles having opposed to them 3,000 of the enemy, a porportion of 1 to 6.

Manifestly such a small number could not cover a line of such extent by uniform intervals. Nor would all parts of the line require the same protection. Since most of our coast defenses are on salient points of the coast, the line of land defense would be much shorter than above given. Due allowance must also be made for natural obstacles, which would further shorten the line of active defense, and which in some cases would allow the advance line to be considerably retired.

Making all the above deductions, it is still apparent that the line would be too long for consecutive occupation.

We therefore must make such a disposition as will effectively prevent the advanced line from being penetrated or driven back. To this end salient positions of the defensive line must be occupied, including important bridges, roads and heights. These positions should be occupied by field works of sufficient size and strength to withstand the probable attack.

For such a line probably four positions to accommodate 80 to 100 men each would be sufficient; this would place them about two miles apart. The positions selected should be such as to cover to the best advantage the intervening ground, as well as to command the approach.

Assuming that the nature of the terrain would allow and require the use of light artillery and cavalry, as well as of infantry and engineers, the total of 1,000 men would be divided approximately as follows:

7 companies of infantry 1 troop of cavalry 1 light battery or company of foot artillery 1 company of engineers	} Or troops acting as such.

Four companies of infantry would be encamped near the entrenched positions ready for immediate occupation. They would have scouts patrolling the line between these positions ready to communicate information at a moment's notice.

The cavalry and light artillery would be encamped in rear of the line. There should be cavalry outposts well in advance of the main line on the coast and along important communications. Where light artillery is not needed, foot artillery may be substituted for manning the various field guns.

The remaining infantry should be encamped near the permanent works for defense of the shore front, flanks and immediate rear defense. The engineers are encamped near the reserve infantry and utilized in repairing roads, bridges, obstructions, field defenses and on demolitions.

The general character of the entrenched positions should now be considered. A closed work would in nearly all cases be undesirable, since rapid ingress and egress are important considerations. Allowing for a vigorous defense by 100 men, and each occupying a front of 1½ yards, the line of parapet would be about 150 yards. If the intervals are about the length of the parapet the perimeter of the position would be about 300 yards.

The parapet should be 4 to 6 feet thick, arranged for infantry fire and provided with suitable platforms for the necessary field guns. The trenches should be located on important sites, but well concealed. The intervals between positions should be covered by infantry lines where approach is possible. These lines, as well as the trenches in the earlier stages, should consist of shallow lying-down trenches, deepened to kneeling or standing trenches where time will permit and where drainage is practicable.

A retired line should be constructed upon similar principles. Parapets should also be thrown up between emplacements along the sea front, and also directly in rear and surrounding all the fortifications.

It will be noted that no regular redoubts are provided for. The results thus far of the Russo-Japanese war show that concealment of positions is only second to their proper location. In the battle of Wa-feng-goa on June 16, 1904, described by Mr. Thos. F. Millard, the Japanese field artillery made frightful carnage among the Russians, due to a great extent to lack of concealment on the part of the Russians. The Japanese field guns numbered 108 and the Russian, 64; the range was 3,800 yards, about 2 miles, and within fifteen minutes after the opening of the combat, the Russian guns were completely silenced. From 10,000 to 15,000 shells were thrown by the Japanese, and all by the indirect method, firing from concealed positions.

In the Boer war the Boers made use of deep, narrow trenches, with inconspicuous parapets.

Vertical cover should also be provided, especially for

the men not actually engaged, and this can best be obtained where the terrain will allow by constructing bomb-proofs under the parapets. The works should not only allow of good passive defense, but also for an active offense, and to this end the greatest possible mobility must be provided. Machine guns form a most invaluable aid to the infantry against close attack. The artillery should preferably be in independent positions so as not to draw fire on the infantry. The guns should be well separated, and platforms constructed in all good positions, with connecting communications so that the field guns can be readily moved. Even the heavier siege artillery should not be considered strictly fixed, as to some extent these pieces can be moved when desired, though of course more slowly.

The trenches should generally not be placed directly on the brow of a commanding position, but a short distance below; this conceals the position and prevents a sky line profile.

This entire subject is thoroughly discussed and exemplified in Thuillier's "Principles of Land Defense."

OBSTACLES.

All the obstacles known to the military engineer should be utilized where practicable, but in all cases of emergency and especially where other means are limited, a barbed wire entanglement would be at once the simplest, cheapest and most effective obstacle that can be provided. This material can be purchased in reels of 1,000 feet lengths costing $12.00 per reel. The lines of wire should be located, where the terrain will allow, at distances of 50 yards in front of all redoubts and field works and trenches, and again at further distances of 200 to 400 yards. The lines should be as high as can be made consistent with concealment and rapidity of construction, and should not be less than three tiers deep. For the advance front of about 10 miles and an interior line of defense of, say, 3 miles, the necessary length of wire for two triple lines will be about 80 miles for the hypothetical harbor under consideration. The intervals between the stakes of the wire obstacles should be covered with small pointed stakes or any other additional obstacles that may be provided.

ARTILLERY.

The number of field guns that would be required in preliminary defense, as above outlined, can only be generally given, but allowing four machine guns and four 1-pounder automatic guns to each position, and six field guns, two machine and two 1-pounders for the general defense, the total number would be about forty-two guns of light field type and smaller calibers, which would cost approximately $100,000. Siege guns and howitzers should also be added where required. The labor involved in constructing the field works and trenches would be performed by the troops, and the cost would therefore be only for the implements used, which would probably not exceed $10,000. As the preliminary defenses become completed they should be made of a more permanent character, and additional material obtained to facilitate both defense and offense. Under this head would come prominently the use of searchlights, which would probably cost $10,000 per light, including complete power and transportation equipment. Plotting rooms, telephones, depots, etc., should also be supplied.

The above general discussion provides for an immediate land defense only, required under great emergency and for defense against sudden attempts to capture the works. Where the attack is to be made by regular siege, or where a large city, depot, or other strategic position is to be defended, the main line must be considerably advanced and the works placed at intervals should be of a more permanent character, but nevertheless give thorough concealment and mobility. For the land defense, which could be provided immediately after the outbreak of hostilities, say within the first two months, no more troops than above considered would probably be available. The importance, therefore, of having some general plan well digested and laid out for each harbor for this preliminary defense, is self-evident. The locations of the lines of defense of the works, nature and number of obstacles and their position, the proper camping places, should all be thoroughly considered and placed on record so that work could be begun almost immediately when required. The inner line of defense which practically surrounds the fortifications at close range should be laid out during peace, and constructed before the advent of war. They should be a part of the permanent defense of the fortress, and, if funds are available, constructed at the same

time. The Russo-Japanese War, especially the attack and siege of Port Arthur, leave no room for doubt that fortifications in the future will be attacked not from the water but entirely by land, and that we can begin none too soon in establishing a complete system of land defense for each of our fortified positions in this country, as well as in our possessions. A preliminary defense as above outlined, therefore, needs a supplemental land defense of permanent value, which should likewise be prepared and completed as far as possible before the outbreak of war.

APPENDIX NO. I.

TYPES OF ARMAMENT AVAILABLE FOR LAND ATTACK.

Type	Wt. of Projectile, lbs.	Diameter of Projectile	Weight of Gun, lbs.	Muz. Vel., ft. sec.	Penetration Wrot-Iron, inches	At Range, yards.
BRITISH.						
12-pdr.	12½	3.0	896	1607	3.2	1000
Hotchkiss 6-pdr.	6	2.24	896	1818	2.8	1000
Nordenfelt 2-bar.	7¼ oz.	1.0	180		.75	200
Gardner 1-bar.	480 grs.	.45	76		.25	100
Maxim 1-bar.	215 grs.	.303	63		.25	100
GERMAN.						
Krupp B. L.	14.9	3.43	986	1545		1000
Krupp B. L.	6.6	2.36	224	1545		1000
Krupp B. L.	8.3	3.19	515	1053		1000
SPANISH.						
Krupp A. F.	6.0	2.24	761	1870		1000
Krupp A. F.	3.3	1.85	515	2330		1000
RUSSIAN.						
12-pdr.	12.0			2700	10.2	Muz.
15½ lb., Mod. 95	15½	3.42		1700		
13½ lb., Mod. 1900	13½	3.00		1950		
ELSWICK.						
37mm	1.5	1.46	231	2540	5.0	Muz.
47mm	3.3	1.85	591	2740	7.5	"
57mm	6.0	2.22	1030	2680	9.0	"
76.2mm	14.0	3.0	1747	2460	10.4	"
VICKERS.						
37mm	1.0	1.46	416	1800	1.9	Muz.
3-pdr	3.3	1.85	616	2800	6.7	"
6-pdr.	6.0	2.24	728	2300	6.2	"
12-pdr. mountain	12.5	2.95	237	918		"
12-pdr. light field	12.5	3.0	448	1700		"
12-pdr. heavy field	17.63	3.0	837	1700		"
U. S. NAVY.						
14.0 lbs., navy	14.0	3.0	1949	3000	13.5	Muz.
JAPANESE.						
11 lbs. Arisaka	11.0	2.95		1660		

APPENDIX NO. II.

COMPARISON OF SPRINGFIELD SMALL ARMS RIFLE WITH OTHERS.

	Springfield Mag.	Krag-Jorgensen U. S.	Mauser 7 mm	German Military Rifle	Russian	Japanese
Caliber, inches	0.30	0.30	0.275	0.311	.30	.256
Rifling:						
No. of grooves	4.	4.	4.	4.		
Depth of grooves, in.	0.004	0.004	0.0049	0.004		
Twist, 1 turn in, in.	10	10	8.66	9.45		
Weight of bullet, grs.	220	220	173	226.82	213	163
Weight of charge, grs.	43.3	37.6	38.58	41.2		
Weight of complete cartridge, grains.	451.15	438.85	385.63	430.24		
Initial velocity, ft. per second	2300	2000	2200	2145	2000	2300
Remaining velocity at 1000 yards	958	901	895	906		
Muzzle energy, ft. lbs.	2581.6	1952	1857.4	2135		
Striking energy, at 1000 yds., ft. lbs	447.9	396.2	307.4	413		
Penetration in white pine, at 53 ft., ins.	54.7	45.8	50.8	48 app.		
Wt. of rifle, including bayonet and scabbard, lbs	9.47	10.64	10.5	11.54	9.75	9.56
Wt. of rifle, including bayonet, scabbard & 100 cartridges, lbs	15.91	16.91	16.18	17.68		
Capacity of magazine, rounds	5	5	5	5	5	5
Maximum ordinate of 1000 yd. trajectory, ft.	20.67	25.8	24.47	23.73		

APPENDIX NO. III.

CHARACTERISTICS OF BRITISH FIELD ARTILLERY.

Type	Muzzle Velocity, ft. sec.	Wt, of Shell (Shrapnel) filled and fused.		Balls in Shrapnel	Bursting Charge				No. of Shells per Gun, including Ammunition Wagon.	
		lbs.	oz.		Shrapnel		Common		Shrapnel	Common
					lbs.	oz.	lbs.	oz.		
Horse Artillery:										
12-pdr. B. L.	1523	12	8	156	0	1½			134	
Field Batteries.										
15-pdr. B. L.	1569	14	0	200	0	1½			142	
5 in, B, L. howitzer	782	50	00				9 Lyddite	15		56
Movable Armament:										
16-pdr. R. M. L.	1355	17	14½	128	0	1½	1	2	72	24
13-pdr. R. M. L.	1595	13	10½	133	0	¾	0	11	108	30
9-pdr	1330	9	12	63	0	¾	0	8¾	72	24
Mountain Batteries:										
2.5-in. R. M. L.	1440	7	10	100	0	½	0	4	72	24
Vickers-Maxim Q. F.:										ring shell
1-pdr. Mark II	1800	1	0				270 gr.			

Type	No. of Shells per Gun, etc. Case Shots	Wt. of Gun Car. and Limber packed.	Length of 50% Zone at Range in Yds. of		
			2000	3000	4000
Horse Artillery:					
12-pdr. B. L.	8	3474	24	54	92
Field Batteries:					
15-pdr. B. L.	8	4116	23	28	46
5-in, B. L. howitzer		5040	18	27.6	38.6 full charge.
Movable Armament:					
16-pdr. R. M. L.	4	4728	33	42.1	48.4
13-pdr. R. M. L.	6	4290	23.25	31.95	38.4
9-pdr. R. M. L.	4	3797	39	61	86
Mountain Batteries:					
2.5 in. R. M. L.	5		18	18	20

APPENDIX NO. IV.

CHARACTERISTICS OF UNITED STATES FIELD ARTILLERY

Weights, etc,	Mountain		Field							Siege		
	Hotchkiss 1.65 B. L.	Hotchkiss 3 in. B. L.	3 in. B. L. R. Mod. 1898	32. in. B. L. R. Mod. 1885.	3.2 in B. L. R. Mod. 1890 and 1890 M.	3.2 in. B. L. R. Mod. 1897.	3.6 in. B. L. R. Mod. 1891.	3.6 in. B. L. Mortar Mod. 1890.	5 in. B. L. Howitzer Mod. 1898.	5 in. B. L. Rifle Mod. '90 Mod. '98	7 in. B. L. Howitzer Mod. '90, Mod. '98	7 in. B. L. Mortar Mod. 1892.
Weight gun, lbs	121	216	835	829	794	830	1200	245	1150	3660 3639	3710 3650	1715
Length bore, cal. ...	25	13	28	26	25.2	25.2	23.5	5.3	12	27	12.7	7.0
Wt. proj. filled:												
C. I. shell—lbs....	2	12	15	13.5		13.5	20	20	45	45	105	125
Case, lbs	2.8	12										
Shrapnel, lbs		12	15		13.5	13.5	20	20	45	45	105	125
C. S. shell, lbs									45	45	105	125
Charge, s. p., oz. ...	2 5-16	4½	20	18.75	18.75	15.25	23	6	22.4	68	56	28
Muz. vel. f. s.....	1313	885	1725	1685	1685	1685	1550	690	1000	1830	1100	710
Penetration steel at muzzle, inches ...	1.3	1.5	4.5	3.8	3.8	3.8	3.9	1.2	2.6	6.2	3.8	2.3

CARDINAL VICES OF THE AMERICAN SOLDIER.

By Major ROBERT L. BULLARD, U. S. A.
Twenty-eighth Infantry.

BUT has he vices?

To speak of him has so long been to sound his praises that now at the mention of his name we have come to expect nothing else. With true appreciation of his virtues and not to make discord on happy occasions I have been wont to join this chorus; yet always with a reservation, a secret intention, on a more fit occasion, of singing him another song, less agreeable though no less true; for, that he has vices, we know who live with him. But I would not drown his praises, because he deserves them, and because, as a mark of our pride and confidence, praise must remain still the surest and best means of drawing from him his best effort. He will do more of whom much is expected. Yet, it would be folly to shut our eyes upon his faults and fail to measure well his vices. In this we need not haggle over small things, but look at those larger characteristic vices of which minor defects are generally but varied manifestations. And,

First. *An abnormal claim, view and development of personal independence; a spirit rebellious and insubordinate to authority.*

In their daily lives, Americans have probably a wider personal liberty than any other people on earth, with a constant tendency to stretch it. They or their fathers quit the Old World to seek, and afterward fought England to keep, or better said, to enlarge it. The people come very near making their own law, and by public opinion also set the measure of how far they shall submit themselves thereto after it is made. However much law, indeed, they may have had put upon the statute books, they have never manifested any disposition to allow themselves to be very much restrained from doing what they please at any time. Their laws, starting with the great Constitution, are made elastic to fit their will. If not elastic, no law, regulation or authority can long stand. Americans are but little conformists, have been and are the least regulated civilized people on earth. Further, the varied resources of our

country have given practically every citizen the opportunity of an independent, self-directed career. Again, in the last half, and especially in the last quarter, of a century, there have come to the people through the workings of politics, unions and societies, great taste, feeling and conceit of personal power that has turned the head of everybody. Add to this that Americans know in their country no grade of society, no class, to belong to which carries with it for the individual the least claim to the deference or respect of his fellows. The practical result of all these has been to inculcate in the man self-will, self-importance, self-paramountness and independence, until now it is his settled view that law, authority, and, in fact, most things else should conform to his will, not he to them; that he, the free American, must not be much bothered with restraints and regulations.

Such is the tradition, such the experience and such the feeling of the American who comes to be a soldier. They make him feel himself independent and above subordination and obedience, they make him chafe under the least exercise of authority, they make him, in short, an awful subject for discipline. He has little or no respect for any authority. It is a vice, a military vice and a vice still, though, I admit, the vice of independence is one at least partially self-compensatory.

On Americans accustomed to American ways, the American soldier's rebelliousness, insubordination and lack of respect toward authority do not easily impress themselves. It is, however, the first thing noticed by foreign observers of our armies and by ourselves the instant we observe foreign armies or even foreigners as soldiers in our own armies. In the Regular Army the truth is brought strongly home to us in another way. Take the best of the post non-commissioned staff officers. It is a veritable roll of honor to us all. To be borne thereon is a warrant of worth, a certificate of excellence proven. It is loaded out of proportion with un-Anglicised German and Irish names. This means that in the long test of soldierly qualities made to determine fitness for these positions, in subordination, obedience, discipline, respect of authority, faithful and efficient service, the Weinbergers and the Wunderlichs, the Dolans and the O'Briens have been found superior to the Williamses and the Johnsons. At the post we see, too, that it is the old sergeant with the brogue who, by discipline, obedience and faithfulness, has proven his worthiness above his comrades

of American breeding and traditions, and to-day, as in the past, still carries the colors of his regiment. Why is it? Is it because Americans do not want these positions? No, the positions are much desired. It is because of a foolish pride of independence which prevents them from yielding the requisite obedience, discipline and faithful service; or, in impatience, they have turned off the road to try a "short cut," and lost sight of the goal entirely.

The hardest struggle in making soldiers of Americans is met in trying to overcome this characteristic fault. In the American view, a man who, no matter for what honorable purpose, has given up control of himself, has disgracefully surrendered his right and character as a freeman. In his enlistment and full submission to military authority, a soldier must do this, and accordingly the soldier and the honorable profession of a soldier are, and always have been, held in contempt by Americans in general. The view is overstrained and wrong; but it is none the less operative, so that out of a mistaken respect for it good men are often kept from the ranks; or if they come, are oftener still, in the fear of doing something unworthy of their manhood, held back from that thorough obedience and submission of will necessary to make a good soldier.

Under the influence of this vice, when aroused the soldier stops at nothing. To "leave," to "quit" any employment on the slightest jar when everything does not go to suit them, is everywhere characteristic of Americans. In this no sort of conditions, agreements or contracts ought in the common view to have, or are allowed to have, any binding effect. It is a right, Americans have come to think, and it is a rule almost without question or exception in the common life of America. The idea comes into the army with all recruits. Under it, "fashed" a little at first by discipline, not well taken hold of by their officers, they are apt to pay no regard whatever to the enlistment oath, but desert in platoons. They have done it in the past and are doing it now. It is for this reason that I have elsewhere advocated at this stage greater personal attention, more careful personal instruction, by the future commander than recruits are to-day in our service accustomed to receive.

But not deserting at this time does not at all mean that the soldier has given up the common American aversion, insubordination and rebelliousness under command. As is well known, a great number of Americans remain rebellious and

impatient of authority to the very end of their soldier days, never really becoming disciplined, obedient soldiers, but, owing to the quality under discussion, ever hoping and trying to dodge the bugbear of their life training, recognition of the authority of any one over them. This spirit of lawlessness has often enough in the last few years shown itself among our soldiers, who, near the time of discharge or just after, on our transports, on railroads and in camps, have defiantly broken and trodden down every rule, regulation and authority and gone riot. It is shown in a lesser degree in the continual movement on re-enlistment of even fairly good soldiers from company to company, from regiment to regiment in the service, in the hope of finding some place where they may soldier without feeling authority, without giving up independence, without having to render obedience to any one.

Not less marked in the officers is this aversion to yielding to authority, to giving up their own way and will. This first step, this essential in soldier-making, they sometimes never take. It is the recent experience of many of us to have seen officers of the United States Army who had been years in the service, by opinion and conduct, nullify over wide regions and render ineffective the settled and well-considered policy of their government, because they were not, in their words, "in sympathy with the government's policy in keeping these islands." This was the development of the vice in their cases. Having seen this, one thinks less harshly of the character of others who, forty years ago, with like views under like conditions, were square and manly and soldierly enough not to remain within our lines, but joined the enemy in the open field.

Second. *Excessive and unnecessary wants: wastefulness.*

In the last three hundred years, with a wastefulness the like of which the world has never before known and can never again know, the people of America have worn out, wasted, consumed, destroyed, a large part of the natural resources of a land whose resources seemed inexhaustible. When we consider this consumption and destruction in two things only, soil and forest, we are appalled. We wonder what we could have done with them and why we did it. In three hundred years we have, it appears, done about as much to exhaust our country as the Chinese have done to exhaust theirs in three thousand.

Simultaneously with, and under all this consumption and

destruction, the American character has shaped itself. Such living could create but one kind of character, one of infinite wants, of insatiable demands, a character that calls for a pound where an ounce would suffice, a rod where a foot would be enough, and wastes the surplus. A Frenchman, it is said, can live on what an American wastes. We are now learning that two Japs or two Chinamen can do likewise, and thereon accomplish as much work as an American. To know our habit we need only to look in at the kitchen of any troop, battery or company at noon to-day. They cook great quantities, eat great quantities, waste great quantities, and the commander cannot deny you that more is eaten than needed, and as much at least wasted as eaten. The same thing runs through every branch of military supply, equipment and labor. Our wants loom before us and appear mighty necessities. To drive a tack we think we need a sledge hammer. If the carpenter wants to saw a board, he demands a whole chest of tools. The quartermaster needs a wheel-barrow and makes requisition for a six-mule team. Our transports feed the fishes of the Pacific with first-class commissaries. The waste and losses of our detachments in the Philippines fed, clothed and equipped half of Aguinaldo's insurrectos, and in a way that surpassed their wildest dreams of luxury. The second lieutenant thinks he needs and he wants to carry an array of baggage that would suffice for a brigade headquarters. It was doubtless this that caused the old campaigner, General Crook, preparing for an Indian scout, to exclaim when a lieutenant offered his services: "No, no; I don't want you; I'd rather have a mule."

The effect of all these wants on the army, whether in peace or war, is serious. They mean transportation. Now, there is for any army but one real question to-day. It is transportation; and the excessive personal wants, the careless and customary waste of our officers and men, so pile up impedimenta and multiply the supply of food, clothing, equipage, everything, as to make this a more serious problem with ours than with any other army of its size that has existed in the world up to date. Being used to all this great supply, if he does not receive it, the American feels himself deprived of the last necessities of life, regards himself as disabled, and, so imagining, does in effect seriously lose in efficiency.

This problem of transportation—"We can solve it," we hear declared with confidence. Yes, we always have done so, but

at what cost and pains appal us to think. Russia has always solved it until just now. Our solution has been a simple increase of the means of transportation to the fulness of heart of everybody, till wagons and packs filled the land and transports covered the sea. Always heretofore we could afford to do this, because never heretofore have the United States, single-handed, made war against an enemy even approximately our equal in men, money and resources. This cannot always be so. And, besides, while there seems no limit to the increase of our wants, there is a limit to the bulk of transportation and impedimenta which an army can accumulate and remain effective. At least one of our generals in the Philippines, an experienced soldier, thought that we had gone beyond this limit, and with determination himself took charge of the issue of supplies and the limitation of the means of transportation. The results justified him. He broke the backbone of the insurrection thus; but in the army and in the newspaper the American's dislike of anything that limits him to his real needs still contemptuously pictures the general as a man fallen helpless, loaded to earth under a burden of details. When the participants in the numerous successful expeditions which he planned shall have died all of great old age, when we shall hear no more of the fearful sufferings of having day after day had nothing to wear but the uniform, and nothing to eat but the daily three-pound army ration pieced out with the rice, carabaos, chickens, eggs and bananas which the country afforded, we shall perhaps hear the general's meanness less criticised. With two to three times as much transportation and plunder as in the general's day, the author has since made many small expeditions under like conditions with far greater labor and pains and no whit better results.

In short it is the vice of American soldiers to want and demand more than they need or can use. When as soldiers we shall make the question not how much we want but how little we need, not how much we can manage to carry but how much we can leave behind, we shall be looking at the matter aright and taking the first step in the solution of the only real problem in any war—transportation.

A few paragraphs back we were almost touching another general failing whose gravity puts it in a class by itself. I mean:

Third. *A deficient sense of the seriousness and the obligation of the enlistment oath.*

This is manifested almost wholly in desertions, and this word alone would in fact, be a fit title for this head of my subject. To declare desertion a characteristic vice of the American soldier, is a grievous charge. I am as loth as any to admit its truth, but figures and experience are large enough to compel conviction. At one time or other in his career, probably one in every four soldiers deserts. No less is to be expected; it is the logical result of a general public usage, view and opinion:

1. Because "quitting" at will, "leaving" on the slightest jar, the least dissatisfaction, any employment, is the custom and expectation of all Americans, who look at it as a right, and indignantly resent any questioning thereof—a truth in the knowledge of us all and a condition perhaps daily growing worse.

2. Because the American public look upon the soldier, his uniform and profession, with open contempt—something beyond question.

3. Because desertion, though stamped by law and regulation as a disgrace, a shame, and a crime involving moral turpitude, is not at all any of these in the opinion of the American public, the deserter's fellow-citizens, who think of him only as one who, in the exercise of his right as a freeman, has simply "quit" a job which he does not like, and to which no one has, or ought therefore to have, any right to hold him. They do not, accordingly, wish to see him given up to trial, ostracised or deprived of civil rights. We have seen tens of thousands, on both sides, of the faithful old soldiers of the great war, but who has seen among them a "bounty-jumper" or a deserter? Are they dead? No, the public has never been willing to permit them to be known as such. To the public there was no serious shame in what they did. It was, nevertheless, desertion.

The conditions shame us. The oath alone does not hold.

As to the remedy. It is instruction, given to the individual soldier (because it cannot be given to a whole people, however much they need it), moral suasion most largely at first, because in his impatience under discipline and backed by public opinion, as above described, he is likely to break away, as he is doing right now, under sterner measures. Relying upon his reason

and patriotism, which are good enough when appealed to, show him the folly and the vice for the soldier of these views and habits. Sterner measures properly follow.

Fourth. *Intemperate criticism of superior authority; a loose tongue.*

Their very great personal liberty, the free discussion and unrestrained expression of opinion on all public men and affairs, and, for that matter, on a wide range of private affairs, the habit of setting themselves in judgment on men and measures, have left Americans with the idea that there is nothing and no one that they are not competent and at liberty to criticise. That idea and habit come with the soldier into the military service. Now, civil life and military life are compensations of each other. What the civilian gains in liberty, the soldier must give up in sacrifice. Further, they are antipodal of each other. We must therefore expect that what is eminently proper in one, shall generally be found eminently improper in the other. The free and unrestrained expression of opinion on matters and persons is one of the things to which this remark applies, and this valuable privilege in the civilian becomes an abuse and a vice in the soldier. Now the soldier rarely figures the difference between himself and a civilian, but, while leading a life wholly incompatible with a civilian's ways, in many cases long, and in other cases forever, tries to hold on to a civilian's privileges and habits. On account of the American habit of having a hand in the management of everything, if something be done without considering or consulting him or beyond his observation, that, in general, is enough to awaken doubt or suspicion in his mind, to incur his disapproval and criticism. As in military matters, the theory of execution is exactly this, it may easily be seen what a wide field of criticism is thus opened to the American-bred soldier. He covers it. History is full of examples—it is needless to cite them—and experience is loaded with the results of his work. Every one can call up instances where whole garrisons have been set by the ears, whole commands demoralized and their usefulness destroyed; generals, colonels and other high officers picked up and moved away and commands broken up, in consequence of intemperate comment and criticism. All men can talk, and there seem to be none so low, none so great fools or of so little consequence,

that their words and opinions do not have some influence on some comrade.

It is a vice that affects all grades, but most of all the officer. He is often not simply a good-natured growler, but a bitter "knocker," who spreads all discontent. There are really few of us who plunge ahead doing things. The bulk of us are standing by, handy with our comment, with ready demonstration of the inappropriateness of the methods used, the clumsiness of execution and the insignificance of the results attained by the man who is doing anything. After accomplishment, we are quick to show how much better it could have been done in another way. That finished, we "stand by" still to do the same thing for the next fellow who comes to do something. Indeed, many are thus kept so busy criticising what others do that they find no time to do anything themselves. In matters of honors, advancement and promotion, this habit brings some to the worst stages of demoralization and unreason. For the Regular Army there has been provided a rule of promotion worked out for peace. The rule does not consider the fact that war reverses peace, obscures the prominent and makes prominent the obscure. It disregards the fact that war is the antipodal of peace and that the methods of peace ought not, therefore, logically to be expected to be found suitable in war. It neglects the livest spring of human action, reward of merit. Finally, it assumes to hold in abeyance a law of nature, the triumph of the fittest. Now, shutting its eye upon all these things, and upon the further fact that this custom of promotion had already four times been tried and four times been found wanting in as many wars in our history, unrestrained criticism has been howling ruin and demoralization and crying the cause of all inefficiency, dissatisfaction and apathy upon authority which, in a fifth war and its immediate sequences, has found it necessary and expedient, as in the four preceding ones, to depart from that rule.

Nor is the home authority without sin. The law has its maxim, "The King can do no wrong"; the American garrison its axiom, "The Commanding Officer can do no right."

Where this habit comes, duty and discipline wither and fade. Of the many I have seen beset with it, I know just one officer whose efficiency has apparently remained unimpaired by it, and perhaps I have observed him too short a time to be sure.

The cause of so wretched a vice is idleness. Its cure is

therefore simple—work. Give everybody all the military work that he can do (nay, more), and make him do it.

Fifth. *Selfishness, self-seeking.*

I will not lay this fault to the enlisted man. It is not his; it belongs to his officers, high and low, in great things no less than in small. It is an offensive charge, yet true, deny it who may. It is a quality so mean that we must expect general indignant denial; but it is a vice not removable or imputable on words alone, but on acts and conduct. An examination of these in our own ken leaves us with but one conclusion, however disagreeable.

For twenty years our infantry, high and low, cried out for a three-battalion organization. The old organization by companies was condemned and scoffed at, as antiquated and wholly unsuitable. Having observed during those twenty years of struggle, who to-day does not believe or who can deny that there was a general secret hostility and even an active opposition to this reorganization on the part of some other branches of the service that would profit nothing in the promotion that the reorganization proposed? What was this?

In the war the three-battalion organization came. Soon thereafter many who had but recently been crying aloud for this reorganization and who now had received the promotion it brought, proceeded to nullify, as far as in them lay, its real benefits to the service by disregarding it, by ignoring it, or deliberately arranging commands so as to kill the military operation of the three-battalion feature. Now, originally, did these seek the good of the service or the promotion alone in the three-battalion bill?

Again, what, no long time ago, became in later stages, when promotion was largely eliminated, of the numerous partizans of the staff reorganization proposition which, in its earlier stages, seemed to promise so much promotion to so many?

Who has taken any interest in legislation which looked solely to the good of the service without promotion to any one?

Are they many to-day who, in discussing promotion on merit, dwell rather on the rights of the service than on the interests of individuals?

From these suggestions one may draw his own conclusion.

For selfishness and self-seeking there is but one cure—to lay it bare to public contempt.

Sixth. *Contempt of humble things and duties; determination to avoid or throw them off.*

This feeling pervades all Americans, in general to the dislike and neglect of duties and things for which they are really competent. It is but the other end of a lofty conceit, of a feeling that only things of first-rate importance, only the duties of the higher stations, are worthy of their attention. To this is usually added the secret belief, with its consequent dissatisfaction and neglects, that proper appreciation of merit would place them in far higher positions. The house-maid performs her duties without interest, and with only the absolutely necessary efficiency, because she feels herself called to higher things. The laborer dislikes his work because he feels himself superior to it. The cook makes pan-cakes that kill at a hundred yards, because—well, the business isn't worthy of him, and he expects to leave the job before breakfast is over, anyway. The soldier "old soldiers," that is, does time not duty, because that duty is too humble to suit him. The subaltern officer doesn't know how to fire his platoon, but is concerned about how the captain is managing his company. The captain pays little attention to the details of company work, which are in his view really trifling and unworthy of his attention, but he has views about a regiment. The field-officers are intent on strategy, which belongs only to the general. Briefly, the American "has the big head," feels himself above humble duties, positions and means, and has generally arranged in his own mind to throw these off in disgust to assume higher before he has properly fitted himself for even the lower. Ambition is commendable, but not that sort which aspires without earning, not that sort which, in its impatience, unsubmissiveness and unwillingness to do and bear, eliminates the American soldier in the first spurt of his career and has filled even the next higher grade above common soldier with foreign names.

THE FALL MANEUVERS.

By Colonel JAMES REGAN, Ninth Infantry.

THE combined maneuvers, or the fall maneuvers, have been a success in this country. Especially is this the case with those recently held at Manassas. Their importance is almost unquestioned, and their weakness is lack of time for training and the great expense involved. We do not know the origin of the remark, but it was quite common in the camps, muttered quietly however, that the recent Manassas maneuvers would be the last, on account of the expense and the strenuous work to which the National Guard was subjected. This was perhaps mere talk; at least we hope so, as these affairs, peculiarly national in character, are not confined to any State. If the work cut out is too much, this is a matter of detail and can readily be adjusted. The work certainly should bear some proportion to the time. Large camps of maneuver are new to the American people, but they have been gradually working their way into favor for the last few years, and have come to stay. Dollars and cents is no argument against them, because of their paramount importance to the nation. The scope and management can be readily adjusted. Time is a great factor in their success.

The life of the nation may not be dependent upon its army, but it certainly does depend upon the capabilities of its citizens to bear arms and fight its battles. The nucleus of our military force is the Regular Army, a trained body of men composed of citizens of this country, for the time being under military government. All our wars have shown that the Regular Army forms but a small part of our national forces, and in the future as in the past, for immediate and special exigencies, we must rely upon the militia, and beyond their sphere, upon the volunteers.

The spirit and purpose of recent laws is to expand or enhance this force so that we may have a sufficient number of trained men to meet the first move of the enemy; and can this be better done than in such camps of maneuvers as Manassas?

The instruction our soldiers receive in these camps will ad-

mirably prepare us to meet the requirements of our position on this continent. We do not want the imperiousness or militarism of Europe or despotic governments; it was from this the forefathers fled in the seventeenth century. The personnel of the army is in the full sense democratic. This is shown in its laws governing appointments and enlistments, and in the restriction of its powers.

Affairs like the Manassas maneuvers are broadening. The object of the drills which are daily practised in armories and at our various military posts is to have the men and units of organizations to move evenly and without confusion, or, as Van Scherff puts it, "To bring the men as individual combatants, and the individuals as joint combatants, to the highest possible pitch of warlike efficiency, to make soldiers of them, and of these soldiers to form organized bodies." This, with the moral training, love of country and *esprit de corps*, is the aim of military education. In a word, it aims to preserve order out of apparent disorder, because men trained to instant obedience under all circumstances are apt, when properly led by their officers, to keep their presence of mind in battle. These are the qualities which distinguish the trained soldier, "The Regular," over masses disorganized or hastily organized, illustrations of which we find in all wars.

Until recent years in this country our drills were of the parade-ground order, unvaried except by target practise and some detached duty. It was the same old grind from the beginning of the year to its close. This has been all changed by the introduction of the maneuvers and advancement in military ideas; so from this on we are apt, irrespective of expense, to have a well defined and practical system of varied military instruction, each year being an improvement on the one preceding. The military gait, or strut, and the well-fitting uniform are conducive to *esprit* and should be encouraged. Maude, the brilliant writer upon tactical subjects, remarks that "No practical soldier ever thought that the wall-like precision of the march-past, or the lightning rapidity with which arms were shouldered, had much to do with the science of theoretical tactics; but they did know that these were the outward visible signs of the knowledge and the spirit which alone rendered the execution of practical tactics on the battle-field possible. What they did not know, and what to-day (unless the Japanese are now excepted) no nation but the Germans have thoroughly

realized, was, that mechanical obedience would not suffice, but that it must be combined with higher education of the man himself."

The maneuvers now so successfully started must be kept up. A certain time in garrison or armories devoted to ceremonies and exercises is very necessary for rudimentary work and to instil professional pride. But to get an idea of the real duties of the soldier, we must get on the road and in the field. What a splendid illustration we had of this in the maneuvers at Manassas by the "Blues" and the "Browns." Just think of our militia taking the road from bivouac a little after one o'clock in the morning and making a forced march of twenty-seven miles, in the dense woods, crossing streams just as they were, shoes and all, and near the end charging the enemy across a creek that wet them to their armpits, and in this wet and uncomfortable condition they fought all day until they had won the combat. It is only by these big camps that our people can get a real idea of what soldiering means. Victories in all great wars through the different military epochs have been due to well-disciplined and seasoned armies. It took nearly, if not quite, two years in our Civil War to learn this truism. France thought seriously about it after the War of 1870, and is still thinking.

The older officers of the army can look back and think of the effect the old grind, or the constant routine of the garrison, had upon our soliders. It not only caused drunkenness, but discontent and desertion. And they may recall also how contented the men were on the march or in the field. They were hearty and strong and felt that they were doing real soldiers' work. In the year 1873, when we were on a five-months' tramp in Dakota, on the final survey of the Northern Pacific Railroad, the men got so that they could easily step off at the rate of three miles an hour, and complete a march of twenty and twenty-two miles apparently as fresh at the finish as at the start. This is not remarkable; it was a common occurrence not so many years ago on our frontier. Why, last year on a six-day practise march of the writer's regiment, the men, and most of them new men, marched twenty-three miles on the last day in rain and mud, and to show that they were not especially fatigued (?), took the double time across the parade to their quarters. These are mentioned here to show what a little seasoning will do. Could the National Guard regiments have remained at Manassas a few days longer, they might have done likewise. This season-

ing cannot be had in armories, etc.; it must be had at the maneuver camps like Manassas.

If these outings are so necessary to the Regular Army, how much more so must they be to the organized militia of the different States. And how let us ask, can the objects of the act approved January 21, 1903, to promote their efficiency, be better carried out? One of the prime objects of this law, and one of vital importance, is to have a trained force of militia ready for instant service when called uopn under the Constitution. Certainly, in the National Guard regiments, which passed through the serious practical lessons of war at Manassas, there can be found many men, in consequence of their experience, capable of organizing, training and commanding volunteer forces, and the more of these maneuvers we have, the more of such officers will we have. Many of the best regiments throughout the States furnished trained officers to the volunteers in the Civil War, but the ones trained under the present system will be much better prepared for any further contingency of war than they could possibly have been during any period in the past. The Secretary of War recognizes this fact in his report of 1903, when he states that "It is for the interest of the National Government to make these organizations as effective as possible, having in view their prospective National Service as Militia, and their immediate service as the school for the National Volunteer soldier."

If we persist systematically in having these fall maneuvers, with all the forces working in harmony, the citizens so trained will form, together with the regular troops, but one army, subject to the same command, drawing arms, ammunition and supplies from the same source and subject to the same general system of accountability for property. They will have become familiar with the same arms, ammunition, supplies and forms and methods of transacting business in similar organizations under the same discipline. It is only by such means that the militia, later the Volunteers and the Regular Army, can possibly form a homogeneous force to bring about a habit of co-operation and mutual respect and good understanding between the officers of the two forces. There seems to be one thing lacking, however, and that is, the National Guard regiments ordered to the maneuver camps are under the discipline of the Regular Army officers by courtesy only. The colonel, representing his governor for the time being, may decide a matter for his regi-

ment that conflicts with orders of the general commanding. This was pointedly demonstrated at the Manassas encampment, when so many regiments in the Second Division declined to participate in the grand review for various reasons—in one case, because the regiment failed to get breakfast, but principally because the men were not equal to it physically. Let it not be understood that this was done in a defiant or wilful spirit, but simply in the spirit that in such cases they had a right to decide the question for themselves. Of course, for a serious breach of orders they might be ordered home. This matter is mentioned simply because it was referred to in the various papers. The conduct of the National Guard during the four-days' maneuver was most exemplary, and to this fact all their high commanders bore testimony. General Bell, in his "General Orders Number Five," expresses his appreciation of the sustained interest manifested by the attending organized militia, despite the discomforts of bivouac, heat and dust, in maneuvers which involved all the hardships of actual war. He also refers to the admirable discipline shown by all the troops, both regulars and organized militia. As far as these matters came under the writer's observation, every order issued was promptly obeyed.

It was the writer's good fortune to have excellent regiments in his brigade. While the work tested their mettle to the fullest extent, they nobly stuck by their work and acquitted themselves with honor. The work cut out for them during the maneuvers involved sleepless nights, the hardest kind of marching and numerous deprivations, and so far as it came to the writer's attention they did it without a murmur. The *esprit de corps* of companies and regiments was remarkable, and where it showed the most was in the grand review, involving in the case of the Second New York Infantry, a march of seventeen and one-half miles, a severe test after the four days of battle. Well may New York feel proud of this regiment; it is a most remarkable one. I believe this regiment was the strongest of any in the maneuvers, and it seemed to be a pride with them to maintain their numbers to the end. The Ninth Massachusetts Infantry was also splendid in this direction.

The great desideratum of these fall maneuvers is time. Especially is this necessary for the organized militia. An attempt was made at Manassas to take the regiments through a course of progressive drill in close and extended order, in battalion, regiment and brigade, but little could be accom-

plished in a day and a half in preliminary work prior to the practical work in the maneuvers. But although the time was short, it was fully taken advantage of and the regular officers and companies for that matter were assigned to different National Guard regiments to help out in every way. Also the regular quartermasters and commissaries with their non-commissioned staff officers, performed excellent work in this direction. During the execution of the problem, the regiments alternated in the matter of advance and rear guards and flankers; and all of them had practical and varied instructions in outposts and patrol duties. The lessons learned even in the short time must prove valuable to the Guard. It would be a great thing for the militia and the spread of military knowledge if from ten to fifteen days could be spent by the militia in these camps. This would give time for preliminary instruction and would permit the problems to be carried through in a rational manner, without fear of breaking down untrained men.

It would seem this is not too much to expect from the organized militia, in view of the fact that the General Government expects it and provides for it in its recent laws, because it is expressly stated in such cases that when so participating they shall receive the same pay, subsistence and transportation as is provided by law for the officers and men of the Regular Army, to be paid out of the regular appropriations for the support of the Army. Unusual exertions should be made, therefore, in every State to meet this laudable purpose of the nation. If the States cannot send any particular regiment as a whole, because the men have to be at their work by a certain time, let them send composite regiments, who may be able to give the time necessary without detriment to themselves or their employers.

The writer recently attended the encampment of the Pennsylvania National Guard. There were between 9,000 and 10,000 men in camp on the old battle-ground of Gettysburg. The thought came to him while he was in this camp what an excellent chance there was for movements of some importance, or to instruct in strategy, grand tactics and the minor operations of war. While the grounds were not quite so extensive and varied as those of Manassas, still they had accommodated the great armies of the Civil War in one of the most decisive battles, and he thought then that almost any problem in war might be solved thereon. The Pennsylvania Guard used it

only for ordinary work, but with a proper contingent of other forces from the Regular Army and contiguous States, say for one, New York, the exhibition at Manassas might have been equalled, if not surpassed; and, let us add, with much less expense. Why is this not a good idea to have the fall maneuvers centered, so as to have them in sections; for example, one to embrace the New England and Northern States; another in the Central West or South and so on, each section being established so we can have sufficient troops at each to illustrate the art of war in all its varied features. The Government, in its recent laws, provided for this also, in allowing for separate State encampments of the militia and out of an annual appropriation for the purpose, the same pay, subsistence and transportation or travel allowance as are made for similar purposes to officers and enlisted men of the Regular Army. This idea we feel certain would cut down expenses radically. In the Manassas camp there were regiments from as far South as Tennessee and Texas. This idea, duly systematized and worked out, would give us two maneuvers where we have but one now, without increase of expense.

After years of experience and service with our troops, we are convinced that we are moving in the right direction and that it is only in this way we can get the comprehensive view of strategy and tactics, with all their incidents, so necessary in time of war. It is hardly conceivable that we could have made such serious blunders in the Civil War had we been prepared as we are preparing now; thousands of lives and much treasure would have been saved. The second battle of Manassas in the Civil War was lost by a failure in strategy in not getting between Jackson and his reinforcements, *via* the Gap. To the "Warrenton Pike," instead of Centreville should have been the order. The latter was fatal, as it took the Federals away from the enemy. The aim of the problems at the maneuvers is to assimilate them as closely to those of the War, the three arms, when possible, combining their action.

To obtain every possible advantage to our troops by these autumn maneuvers, the instruction of our troops before and during maneuvers should be progressively developed, and should be systematically divided into periods embracing the training of the individual soldier up to the great combined exercises, and this is the only way in peace that we can properly prepare for war. And it is only by these means that such

problems as published in General Orders Number 12, c.s., Atlantic Division, can be successfully carried out. To illustrate more fully what is meant the following summary is submitted:

1. The training and leading of the individual arms developed on the terrain.

2. The arrangement and execution of the larger exercises on the terrain suitable thereto.

3. Fire discipline and fire control, combining the fire exercises of infantry and artillery as in attack.

4. Practice marches by day and night, with the journal, reports and maps incident thereto, in accordance with the manual "Troops in Campaign."

And incidental thereto, security and information and development for battle.

5. Exercises of pioneers, pontoniers, hasty entrenchment and field works when possible.

6. The cavalry equitation, and the infantry, when necessary.

7. Duties of the supply departments.

8. Medical and sanitary arrangements, and first aid—highly essential, but indifferently met in all our wars.

9. Field signalling and telegraphy.

10. The attack and defense of fortified places, the troops stationed there being required to exercise in their defense.

Most of the details involved in this summary of instruction would have to be taught in armories, garrisons, field or camps. The grand maneuvers must have special treatment, but we have several excellent examples, any one of which might be used as a model to be improved on; for example, those worked out in the Departments of Missouri and Columbia, under Generals Merritt and Forsyth, and the few within the last five years, Manassas perhaps topping them all. Many ideas in this connection may be obtained from the autumn manuevers of European armies, reported to our military information office.

In the examination of the problems in General Orders No. 12, Atlantic Division c. s., we perceive that they adhere to the general hypothesis or supposition common to such maneuvers by first defining the situation of the two parts confronting each other, the strategical situation of the units involved, and information of the enemy, leaving for the commanders the unforeseen for the initiative. All schemes of this character should be carefully worked out, the natural and incidental develop-

ments working themselves out as they might do in real war, the reports and sub-reports being in the strict military form. In a word, give to these exercises the truest possible representation of a real action, and to the enemy's fire, its full effect. It is a wise precaution to require the opposing parties to halt at 100 paces of each other. The pouches and cartridge-belts should be examined under certificate. All these precautions were wisely taken at Manassas.

It would be interesting to show how the division commanders worked out their respective schemes under the two problems, but as this subject will be treated by them fully perhaps in separate papers, it is thought best at present not to go further into this subject.

There is nothing in the exercises during these maneuvers that should command more attention than fire discipline, and especially independent and judicious use of the art of shooting. This was a matter to which the attention of the umpires was particularly called. They were enjoined to take great care in regard to "Fire Discipline." The instruction stated further that fire should not, under any circumstances, be opened except there is a definite object to fire at, and the degree of firing should be limited strictly to the necessities of the case. An unmeaning fusillade is to be deprecated. As soon as the force of the enemy fired upon has withdrawn, or is for any reason no longer under accurate fire, the firing should cease. The time between maneuvers should be devoted to instruction in firing over all kinds of ground, and from the level up the heights and the reverse. As the company field-exercises are intended to assimilate to those of war, the writer has always thought it would be a good idea to place the figure targets at the edges of woods, along brushwoods, etc., in groups or otherwise, to suit locality, and then lead the men towards them, allowing them to judge the distances for themselves. This idea accords with the saying of a Russian general, "That the soldier must be taught in peace only that which will be of use to him in war."

In the past, too much attention has been given to fancy shooting. It is seriously doubted whether any permanent good obtains in trying to make sharpshooters, because in battle individual men are seldom fired upon, even as close as 300 yards, the men aiming rather in the direction of the decisive point, or the flash which may mark the enemy's line with a fair estimation of the distance. This is particularly the case in the

last stages of the attack. Maude, in referring to this subject, says that "If too much weight is given to good shooting, we get a man who shoots more or less well at long range, but who is not particularly anxious to go in with the bayonet, but prefers cover." This does not mean that the man should not be carefully taught and attain as much skill as possible, and that he should be careless in aiming, because the certainty of hitting the enemy at any range depends on the certainty of the aim. There is too much chance in unaimed fire, as it is apt to be nervous. Individual shooting, to be reliable, requires nerve, patience and judgment.

The necessity of fire discipline was appreciated as far back as 1824, because in the manuals of that period, the men were instructed to fire deliberately by bringing up the firelocks gradually, looking at the enemy to make the shot effective. In those days the value of ammunition and a jealous care in its expenditure were carefully impressed upon the men; for the excellent reason, as pertinent to-day as it was then, that in proportion as a cool and well-directed fire serves to distract and throw the enemy into disorder, so is a wild, confused and hurried fire, which is always without effect, calculated to give confidence, and contempt for his opponent. A shining example of this was the Germans and the French in the war of 1870.

As the reserve militia, perhaps, under the new act, may not have an opportunity to become acquainted with or even see a good rifle until they are called into active service of the United States, it strikes us that it would be an excellent idea to establish armories near the centers of population, contiguous to a good target range, equipped with up-to-date arms, under most careful management, to which citizens might repair to be instructed in the principles of sighting and aiming, and then to allow them at intervals a prescribed number of shots on the range. Such armories, after the land had been secured, might be substantially and inexpensively built. This idea is capable of considerable development and certainly dollars ought not to stand in its way. They would be the means of saving many valuable lives in war by bringing it to a speedy end. Everything that will encourage shooting among the people should be fostered, *a la* Boer—the best weapon is useless without it. The German shooting societies in this country set us a good example in this direction.

We have seen it does not pay to teach fancy positions. By a recent order in France concerning target practice, attention is invited to the fact that "Instruction should not have for its sole object the making of good shots on the range, but the making of good shots on the battle-ground, and the officers should devote their best attention to cultivating in the men those habits of shooting which will be useful to them in the excitement of battle. The making of good records is not to be desired as much as the training of the men who shoot straight while being shot at." The man who shoots well is more than half-formed as a soldier. The Minute Men of '76 and the men who fought at New Orleans in 1812 were not trained soldiers, but they knew how to shoot, as did the "Rough Riders" in the recent war. The words of Inspector-General Breckinridge are pertinent here: "Ours is no longer a nation of God-fearing backwoodsmen, familiar from childhood with weapons, and overcoming natural obstacles, with the practical care of one's self, and with all the urgencies of life in the open. One-sixth of our people are now city-bred, so that practically we have but few trained reserves, although with abundant resources. The men called suddenly to our colors are not necessarily familiar with their weapons, their officers or their organizations, as in Europe."

Our volunteers, until they become strongly inured to war, lack the unity, cohesion and individuality of the trained "regular." It goes without saying that the American volunteers are courageous, and with good officers to rally them at the critical moment, they are certain to give a good account of themselves. The practises of this class of troops in peace should closely assimilate to those of war. Fine armories and uniforms, fine music and the banner on the outer wall are all right to keep up *esprit de corps*, but the reality—campaign suit, hard tack, hard marches and deprivations—is a terrible awakening. Let us hope that the new militia laws will have the effect of removing many of the incongruities of the past, and that the practises and forms of this class of troops will conform to those of the Regular Army, *i. e.*, calling things by the same name, so that when the tug-of-war comes, their officers may readily comprehend the difference between a "Ration Return" and a "Schedule," and thereby avoid delay in providing for their men. We know the "red-tape" of peace goes to pieces in war; war will not brook delay.

Our isolation in the past from the great armies of the "Old World" has perhaps kept us from serious complications. But now that we have jumped our boundaries a little short of 8,000 miles, and with the absolute necessity of maintaining the "Monroe Doctrine," our naval and military affairs ought continuously to command the most serious consideration. It is our wish to be on friendly terms with the rest of the world, as we are a peace-loving people. In view of the facts, however, that European navies are increasing and becoming more efficient every day, and that they are fortifying their island outposts along our coasts with the most approved guns, Americans ought to arouse to a due appreciation of their situation—in other words, keep up ways and means. Prepared, we need not seriously fear any nation or combination of nations. A word to the wise may not go amiss. Heaven has smiled upon us, and let us not forget the nature of the forces we have been "up against" in our last wars and so be lulled into undue confidence.



AN ARMY SERVICE CORPS

By Captain JAMES A. SHIPTON, Artillery Corps.

THE present antiquated method of doing the enormous amount of non-military work of a post, is an old-fashioned inheritance from the days of long enlistments and the simplest rudiments of military drill; when there were always plenty of old, well-trained soldiers available for the purpose and with little else to do. During the many years in which our regular army was, popularly, at least, regarded as a sort of organized national police, whose most important routine duty in garrison was to keep in order certain areas set aside as military reservations, the system worked fairly well. Conditions now are changed, and demand a reorganization of this important feature of army work on common-sense, business principles. This fact has long been recognized by officers in high command and they have frequently referred to it, more or less incidentally, in their annual reports. In 1892 the Adjutant-General of the Army advocated the formation of an Army Service Corps for the different posts, similar to the one already then so successfully in operation at West Point.

In his annual report for 1903, the Superintendent of the United States Military Academy, in urging the increase of the detachment of Army Service men at West Point, concludes his recommendation as follows:

"I feel that the men of this organization as a class, if properly handled, render services as good in quality and greater in quantity than the civilian employees, who are hired in large numbers during the working season of the year. It is not only more economical for the Government to increase the strength of this detachment, than it is to hire civilians to do the work done by these men, but the men themselves are always on hand to respond to any emergency calls which are made upon them, outside of the usual working hours of the day."

In the last annual report of the Commanding General, Division of the Philippines, there is to be found a strong recommendation for the organization of a General Service Corps.

The reports recites that there were about 6650 clerks, over-

seers, mechanics, laborers, etc., who should be supplanted by a corps of trained enlisted men, and points out the evils of the present system with special reference to the conditions in the Islands. The report continues as follows:

"All European troops serving in the tropics have a large number of camp followers who are really native servants. They perform all the drudgery about camp and quarters, and follow the troops in campaigning. The soldiers are reserved exclusively for fighting, and are relieved from all duty not tending to further that end. For all general purposes connected with laboring work around posts, such as kitchen police, scavengers, cutting grass, weeds, etc., a certain number of laborers should be allowed for American company and band organizations, either in garrison or in the field. Natives should also be employed in such numbers as the necessities of the service require, in the discretion of the division commander, and at rates of pay fixed by him. They would be employed in loading and unloading military freights, except supplies actually issued to troops for immediate consumption; in packing, unpacking, and moving military supplies or property in reserve or storage; and in making roads, bridges, wharves, and buildings.

"Extra-duty pay should not be allowed here, but there should be organized and maintained a trained corps of army service employees, and they should be enlisted soliders, so that they may be controlled and disciplined. Very strict prohibition should be made in the law authorizing such army service corps against their employment in any menial capacity for officers, such as personal servants, cooks, orderlies, etc.

"This is a work for the general staff to take up and carry into being. It will be of immense benefit to the service."

In a recent comparison of the Russian and Japanese armies, a well-informed correspondent has this to say:

"Like nearly all of the European forces the Russians go heavily-burdened on the march, while the mobility and the endurance of the Japanese at the time of the war with China were ascribed to their 'flying light.' Not only do they keep their outfit down to the lowest limit that is consistent with safety and comfort, but the Japanese keep with them an unusual number of company servants, whose duty it is to cook, and look after the camps in active campaign. This work in other armies is usually done by company details, and even now it has been decided to instruct our soldiers more thoroughly in the art

of cooking, an excellent measure, to be sure, but one that promises to continue the practice of weakening a regiment's numerical strength by drafts for camp duties. The Japanese force is either resting or giving battle, while that of their enemy is hauling supplies, chopping wood, trenching tents, cooking, policing camp, and doing the thousand and one jobs that are necessary in military housekeeping, and that, if not necessary, are nevertheless ordered to keep the men busy and to prevent their minds from dwelling on their troubles.

"On the march the Japanese put nearly all of their supplies into baggage wagons or load them on their servants, whereas, it has long been the custom in Western armies to impose burdens of from thirty to seventy pounds on the soldier, counting his arms, accouterments, blanket, knapsack, tent pole, canvas poncho, dishes, rations, canteen and ammunition. This inured the men to the hardships incident to war, but it looks as if it incidentally exhausted them to such a degree that their fighting was less effective than it would have been had they gone upon the firing line in better condition. The wonderful spirit shown by the men of Kuroki's army is quite possibly due to their freedom from the burdens laid so easily on soldiers on the march."

In the last annual report of the Commanding General of the Atlantic Division, this subject is referred to in the following terms:

"The need of a service corps to carry on at posts skilled labor of a non-military character, is a subject needing legislative action. Such a body of men would relieve the troops of the line from much work which now withdraws them from their proper military duties. The difference in the expense to the Government would not be great, for men enlisted and used simply as clerks, mechanics, teamsters, etc., and doing their work continuously during the working hours of the day, would be worth at least double the number of men on 'extra-duty'."

For the benefit of the layman (in and out of the service), if any such should chance to read this, it may be explained that the non-military work at a post consists in providing in all respects for all the needs of the entire garrison, which may be regarded as a large and everchanging family, which must be housed, clothed, fed, furnished with water, lights, fuel, etc. Sanitation and police must be looked after carefully, as also preservation of buildings, plumbing, painting, carpenter work,

transportation facilities, horseshoeing, repairs, etc. In an artillery post there are generally steamboats and launches to be looked after, electrical plants for light and power, and pumping plants to be operated. And to cap the climax, and more than double the work, minute and accurate records, in duplicate to sextuplicate, must be kept daily of all transactions relating to every man and every pound of goods in the post. All this work, or practically all of it, is now expected to be done, as an addition to their military duties, by enlisted men detailed for the purposes, under the direction of officers likewise assigned to this duty by the post commander. Under the regulations, depending upon the size of the garrison, a certain number of enlisted men may be detailed on "extra-duty," that is, these men get extra pay for the outside work they do. In an artillery post the number of "extra-duty" men allowed, is usually about one-third of the whole number required to do the work, and right here the trouble begins, since the other two-thirds must be detailed on "special" duty for which they get no additional pay. The only advantage (?) of being on special duty is, that, instead of going on guard once a week, with a corresponding day of hard labor on old guard fatigue, a man usually does not go on guard, but has six days a week of hard work including drills; very often assisting a man with all his exemptions from military duty and extra pay besides. This makes the special-duty man dissatisfied, and it is difficult to find men willing to do this work, unless from among those who dislike the military service and only wait for the expiration of their periods of enlistment; in which case, they are generally worthless all round, from a military standpoint. In time of peace, the men on extra and special duty do almost no purely military work, and are simply enlisted laborers. They are fairly well paid for the work they do, considering their soldier pay, extra duty pay, clothing allowances, rations, fuel, lights, etc. But why should they be considered as soldiers and counted in the authorized effective of the army?

This post is not a representative one in the amount of non-military work to be done—at least, it is hoped that it is not. But since the same conditions apply more or less throughout the artillery, this may be taken as an illustration. The post is newly garrisoned (by two companies) and has a very large armament of all calibers. The reservation is recently cleared (as far as it is cleared at all) consists of 180 acres, and, being on an

island, all supplies arrive by boat and must be hauled nearly a mile, up the hill and down again to the storehouses. Garbage must be hauled over half a mile to be dumped on the beach; coal and wood for a considerable distance to the barracks and quarters; about one ton of coal a day, for half a mile to the power plant and an equal amount for a longer distance to the pumping plant; and there is, besides, much other hard work incident to a new post not yet finished. Guns are being continually dismounted and remounted, and various other repairs to the armament are constantly being made. The messenger service is particularly onerous; on a certain day recently, of the thirty-nine privates in one company, present for duty (not including thirty-one men on extra or special duty), thirty-eight of them were detailed, by name, on guard, old guard and various fatigue details. These men, in general, turn out at fatigue call (at 7.00 A. M.) at this season of the year, to clean up the various offices, take up garbage, sweep sidewalks, etc., coming back for drill at 8.15. In order to get through the work of the day, it is found necessary to excuse them, after the prescribed half-hour's fire direction drill, at which time an average of thirty-five men leave this particular battery.

The number of men who may be considered as permanently detailed away from purely military duty in the two companies here, is thirteen (13) on extra duty and forty-five (45) on special duty; this, of course, does not include special details for the day, nor the old guard fatigue. As a matter of fact, these men are not all available for work eight hours per day, nor do they always work hard during the hours they are available, but it requires this number of soldiers each day to get through with the routine work of the post, even indifferently well. When such a large number of men are so employed, and subtracting the sick, guard and other absentees, this generally leaves for drill, after the first half-hour, only a single gun detachment, often with reduced numbers, and generally, too, with no competent telephone men, range detachment or gun commanders. These left-over detachments are rarely the same for two days in succession, and hence, it is difficult to bring them up to a standard of efficiency. The only thing remaining to be done is to have recruit instruction, gun cleaning or general police of the emplacements. The men detailed as clerks, helpers, assistants, etc., in the various departments, are naturally the smartest men in the company, since these posi-

tions require men of the highest available ability. After artillery drill comes infantry drill, guard mounting, parade, and other incidental drills; athletic, signal, first aid, fire drill, and always work, work, work.

Contrast this with the conditions existing in a company of any of the Continental armies of Europe, where all the recruits arrive at the same time each year, and all the officers and men are available for instruction at all times. A definite scheme is laid down, and officers are assigned as instructors, the whole plan being carried out systematically and progressively. Captains issue their own necessary orders, have no outside duties to take them away from their companies, are held responsible for the training and efficiency of their men, and devote their time and talents to their work.

Returning to our own service; officers, of course, get no additional pay for non-military work (except the commissary), and since the chief of the bureau under whom he is working has no interest whatever in the officer's military duties, there is much resulting confusion. For example: the chief quartermaster does not hesitate to call upon the post quartermaster for "detailed estimates of material and labor, with plans and specifications, in triplicate" for a new guard-house and a new coal-house (an actual case), never considering that the post quartermaster has no assistant competent to do this work, that he is not an architect, nor that he is commanding a company, with no lieutenants, is commanding the post, is commissary, instructor in the officers' school, police officer, fire marshal, a member of the gunners' examining board and of a busy general court martial.

The post quartermaster, with a large property responsibility, and with inexperienced and frequently changing assistants, must, for the sake of his pocketbook, if for nothing else, give a considerable portion of his time to his duties as such—all of which takes him away from his legitimate professional work as a company commander (as in this case), or, if a lieutenant, as assistant to the company commander; which duties are enough to keep any officer busy.

The defects of this system are not far to seek. A few of the most apparent may be indicated as follows:

1. In extreme cases, like the one cited, it tends to get both officers and men into a hopeless state of drudgery, a feeling of being ground between the millstones—the upper, of that which

is apt to appear to most of them as the tremendous task of mastering the intricate details of their profession; the nether, of getting through the equally tremendous amount of non-military work and ordinary manual labor incident to a proper administration of the post. Once get a man to feel that he has a hopeless and distasteful task before him, and he begins to look toward that brighter and more attainable goal, the day of his discharge—never very far off, with our short enlistment. He has only to drag through the remaining months, unless in the too frequent case where the life becomes so unbearable as to induce him to desert.

Under the most favorable circumstances this system has a very bad effect on the men individually, and on the service as a whole. Time-expired artillery men, as a rule, do not re-enlist at all, or go elsewhere to re-enlist, and generally either to the cavalry or to the infantry. They give as a reason for this, among other things, the immensely greater amount of hard work in the artillery, and, frequently, the isolation of an island post. Thus it happens that our gunners and non-commissioned officers, who have attained whatever proficiency they may have, through their own hard work, and that of their officers, are lost to us after one or two enlistments, and we are constantly at the foot of the ladder in this respect.

2. It is a source of never-ending confusion, which necessitates the personal supervision of someone in authority each day. Each soldier is under the orders of two or more perfectly competent authorities—his company commander and the officer under whom he is doing extra work. When he is absent from his military duty, he excuses himself to his captain on the plea of being at this extra work and vice versa. The Government frequently (and indeed generally) gets as many hours of military duty out of this man, as he finds it impossible to dodge, and the same number of hours of non-military work. This system encourages him in this method and the Government is the loser in each case. It is not the fault of the man but of the system. If he wants to go on pass he must get permission from his company commander, the officer under whom he is doing "extra duty," and his post commander.

No continuity of work is possible, but everything must be begun anew with new men each day. In a wider sense, this extends to our garrisons which are constantly changing stations and leaving each new commanding officer to make new plans,

and often spending the greater part of his tour, and the time of his men, in undoing the work accomplished by his predecessor.

3. It constitutes a most serious check to *esprit de corps* in artillery companies. Duties are arduous and some of them hateful, which soon extends to all of them because of the very weariness of distinguishing those which are not distasteful. In fact, no company *esprit de corps* is likely to be found, nor is it to be expected, where the nature and extent of duties make it an object to dodge them to-day knowing that someone else will do them or dodge them again to-morrow. Soldiers and civilians will have more respect for the uniform of the United States Army if they do not see it so frequently worn by the drivers of market wagons and garbage carts.

A recruit, who is a good carpenter, may find himself getting more pay than his first sergeant, who has been twenty-five years in the service. This is illustrated by the following remarks and table taken from the report of the Division Commander mentioned above, which could doubtless be duplicated in almost any company in the service. "Moreover, the present dissatisfaction due to privates on 'extra duty' getting more pay than non-commissioned officers, would cease to exist. A table, presented by a captain of a coast artillery company, showing conditions actually existing in his company, illustrates very clearly this incongruity, and is here given:"

DUTY OR SPECIAL DUTY.			EXTRA DUTY.		
Grade.	Work performed.	Monthly pay.	Grade.	Work performed.	Monthly pay.
1stSgt		$32.00	Sergt.	School Teacher.....	$41.00
Sergt.	Observer	26.00	Pvte.	Post Exchange	30.00
Sergt.	Gun Commander...	25.00	Pvte.	Clerk, Art'y School ...	29.00
Sergt.	Gun Commander...	25.00	Pvte.	Teamster.....	28.50
Sergt.	Observer.....	23.00	Pvte.	Janitor.....	25.50
Sergt.	Chief Plotter.....	21.00	Pvte.	Laborer in Q. M. D ..	24.50
Sergt.	Gun Commander....	21.00	Pvte.	Teamster.....	24.50
Corpl.	Company Clerk.....	20.00	Pvte.	Teamster.....	23.50
Corpl.	In Fire Comd's Stn..	20.00	Pvte.	Carpenter, Q. M. D ..	23.50
Pvte.	Mail Carrier.....	15.00			
Pvte.	Carptr. Ord. Dept...	15.00			
Pvte.	Lab'r Sig. Dept....	14.00			
Pvte.	Messenger Hdqrs...	14.00			

4. It is subversive of military discipline, as is proved by the fact that a great many of our summary court trials are for failures to do work which, bearing no relation whatever to military duties, soldiers should not be expected to do.

5. Military work is indifferently done, and neatness and smartness of appearance especially, are sacrificed. It is too often a good excuse for a dirty gun at guard mounting or inspection, that its owner was on fatigue duty of some kind when he should have been cleaning up; "kitchen police" being a frequent offender in this respect. Men have less "heart" for military work, artillery work especially, because they know that as soon as its period is over, they must go to something else in no wise related thereto; hence, the inclination is to drag through the drill hour as comfortably as may be.

6. Non-military work, when done at all, is worse than indifferently done. The constant oversight necessary to properly superintend incidental work, of a non-professional kind, at this post, is all that one officer can accomplish. And, in spite of his best efforts, the losses and damages caused to Government property, animals, wagons, tools, buildings, etc., by the carelessness or wilful mischief of disgusted or ignorant and unskilful fatigue details, and for which it is almost impossible to fix the responsibility, would almost pay the hire of competent men to do the work *well*, which is now done indifferently or worse. Thus the present system tends to make of the enlisted man an indifferent soldier and a worse laborer or vice versa, according to individual predilection; but always works, in either case, to the disadvantage of the Government.

7. The system is not economical.

8. It would not be applicable in war time, for the simple reason that all enlisted men would return to their companies at the outbreak of war, as a matter of course; and civilians, inexperienced in the work, must be employed in their stead. There is no more important application of that excellent advice to prepare for war in time of peace, than is found right here, as our recent experience amply proved to those concerned. Think of it from a business standpoint, and does it not appear the very essence of folly, that no trained personnel, except a few officers and clerks, are provided to take charge of the matter of transportation and supply of our armies when called upon to take the field?

9. The strength of that part of the army stationed in the United States, is reduced by 7240 men, according to the latest official statistics, or more than two brigades, who are detailed on extra and special duty; and also by a large number of officers, who, while nominally with their companies, are really so much

occupied with non-military duties which must be done, that they have no time for anything else. Even if they attend the different ceremonies and other military formations, it is simply a perfunctory duty, and they have, and can have, but little real interest in their companies, when all their attention is required elsewhere. These officers and men would be returned to their companies as stated above, in case of war, leaving their places to be filled by untrained men. And this number does not begin to represent those who are excused from military duty to a greater or less degree on account of non-military work, and whose military training is correspondingly curtailed.

As a final and complete solution of the entire question, there should be organized a General Service Corps, an Executive Staff Corps, consisting of sufficient officers and men to serve the entire army and supply all the needs of its daily life. If the present laws are not elastic enough to admit of such a new organization, then legislation should be asked for to provide this service corps, which represents to-day the greatest need of our army.

But leaving out the higher question of consolidating the various departments now engaged in furnishing supplies to the army, which is no longer "a question" at all, if viewed from a business standpoint, each post should be provided with a detachment of a General Service Corps, under command of an officer to be known as the "supply officer," and consisting of all the post non-commissioned staff officers (except the sergeant-major), and such other non-commissioned officers and privates as may be found necessary in each post, to do the work now performed by extra and special duty men and fatigue details. One officer, without any, except perhaps occasional routine military duties, but whose first business is to look after all questions of supply, would relieve the three or four officers now doing this work in every post, and leave them free to devote themselves to their legitimate military work. The only non-professional work required of enlisted men should be an occasional general police, and such manual labor as is necessary in the various drills, in policing emplacements and the grounds around them. This is not to be mistaken for a desire to coddle soldiers and to provide servants for them in order to give them an easier life. On the contrary, it is only a proposition to enable the Government to get that amount of military work, and consequently military efficiency, from the enlisted men which

it has the right to expect; and incidentally to get that class of men which the service requires, to enlist. After the organization of this service corps, it might be advisable to increase the number or duration of drills—but that is another matter. It would certainly be expected that the small army of men now on non-military duty, would be returned to their proper companies, as soldiers doing military duty. It is simply not within human possibility, under present conditions, for either officers or men to carry out conscientiously and to the letter, all the various drills, recitations and exercises which are required by orders.

While waiting for the consolidation of all the supply departments, I would have a detachment of General Service men at each post, or in each artillery district, working in the several departments now existing, and of sufficient numbers to do all the non-military work at the post. This detachment should have a definite legal organization and equally well-defined duties.

The supply officer should command the General Service Company, and should be on the staff of the Post Commander, who should furnish periodical reports as to the manner in which the business of the post is conducted. He should take the place of the quartermaster, commissary, police officer, post exchange officer, officer in charge of the post gardens and ordnance, artillery engineer and signal officer, only in so far as *supplying* to the post authorities, the material of these several departments, is concerned. In these capacities his duties and powers should cease when supplies leave his storeroom, and the making of the various reports and inspections required in regard to material which has been issued, should devolve upon the responsible line officer. As commanding officer of the General Service Company, he should have the same duties as are, or may be, prescribed for the captain of a line company. He should be exempt from military duty, and all details, such as surveying officer, courts martial, etc., at this post. At other posts, older and in better order, or having for any reason less non-military work, this officer might, at the discretion of the department commander, be available to the post commander for such other duties (not involving the command of other troops) as he had time to perform. At larger posts he might require an assistant. He should be given rank, pay and

allowances commensurate with the duties and responsibilities of his position.

Retired officers of suitable rank, should be available for this duty, as they now are for college and militia duties; and while so serving should have the full pay and allowances of their grade. They should, of course, not be assigned to command troops, other than the General Service Company, and should be selected for such duty in the supply department as they are fully competent to perform.

Any officer, who faithfully discharges the several duties of this position, need not feel that he holds an office unworthy of his best talents. The task of supplying everything needed, personally and professionally, and otherwise providing for the requirements of even a two-company garrison, is well worthy the best talents of any officer.

The men of the General Service Corps should replace the enlisted men now doing non-professional work and should be enlisted in the regular way, with special reference to the classes of work for which required. They should have a separate barracks and all the allowances, privileges and responsibilities of enlisted men of the line companies.

All men required to perform skilled labor should have a course of training at schools established for that purpose, as well as serving a sort of apprenticeship as assistants to trained men in actual service. Such for instance, as all sergeants who should have a special course in a training school as a preparation for their duties. All cooks should be especially instructed in the use and the handling of the ration. Bakers should be trained to their work; men having clerical work to do, should be given a proper insight into army methods before assuming the responsibilities of their positions. This would cost something, but would be found to be true economy in the end. This training should be done at the special recruiting depots, or in special service corps "depot companies," to which all recruits intended for skilled labor in the General Service Corps should be sent for this purpose. Classes for General Service Corps officers and men might be maintained at some of the existing army schools.

A sergeant cook should be provided in each district (or regiment) whose services as instructor or company cooks in the management of the ration, would be more than paid for by the economy he would make and the greater satisfaction he would

create among the men. It should be his duty to visit each company kitchen for the purposes of instructing company cooks. A district bake shop and butcher shop would also be in the direction of greater economy and contentment. An enlisted man should not be made to pay for baking his bread nor for cooking his meals as he now does, indirectly, under present arrangements.

Each post should have a tailor shop with thoroughly trained employees, to fit and make the clothing for enlisted men. Nothing does more to encourage a proper pride in any right-minded soldier, than a neat-fitting, well-made uniform, and since the men pay the bills, the tailor should be a good one and a member of the General Service Corps, and not of the line, where he has to do military duty, or be excused from it to the detriment of the other men. He makes enough money from his tailor work and should not receive soldier pay. If he is paid as a member of the General Service Corps, he should not be paid by soldiers, whose clothing allowance should give them neat and decently fitting garments, without extra cost to them.

Promotions should be possible in the ranks of the General Service Corps; thus the assistant to the Quartermaster Sergeant, the quartermaster clerk, should be able to hope that he might some day become a Quartermaster Sergeant; the plumber's assistant should be advanced, when competent, and so on throughout the list.

At the beginning, suitable experienced men from the line having special aptitude for General Service Corps work, among whom are many now doing that very duty, should be permitted to transfer, thus giving the best qualities of all branches to the first organization. Certain other men, those having no aptitude for the military service, might, if they volunteered, also be transferred, as being of more use in the working corps.

As is recommended for officers, retired enlisted men who volunteer, should be assigned to duty with the General Service Corps, and while so serving, should have the pay and allowances proper to their grade in the corps. Such as are fitted by education, attainments and experience, should be available for positions of responsibility and for clerical duties. The ordinary laborers required, might be hired as needed at different posts, since the number varies for each post, and from day to day at any given Post. In this case the enlisted ranks of the General Service Corps would show a large percentage of non-

commissioned officers and higher class employees, which would be a great advantage in making the expansion demanded on the outbreak of war. This utilization of retired enlisted men would give useful employment to a large class of persons entitled to be pensioners to the Government, to the great benefit of both parties; by providing those pensioners with positions which they are peculiarly fitted by long training to fill, and by giving the Government the valuable services of persons already in its pay, but without employment.

The beginning of this much-needed reform should be made at once, by providing at least a sufficient number of men to carry on that part of the work which must be done during drill hours. When a General Service Corps is provided, if extra duty pay is allowed, it should be for the purpose of paying for "extra" duty only—that is, soldiers who volunteer, should be paid daily, a certain sum per hour employed, varying according to the class of work done, during those hours only which they would otherwise have entirely free for recreation and absolutely without professional duties of any kind. And such volunteers should be given preference over outside laborers, who should be hired only when there is not a sufficient number of competent volunteers from among the enlisted men.

Some further advantages of this proposed reform may be indicated here:

1. Economy should result from the concentration of all duties of a similar class in each district. Government transportation being available, a great many post employees should be assigned to districts, and their numbers reduced. For instance, every post must have a plumber, but, with all the plumbing in good condition, there is no reason why one plumber and an assistant should not take the place of the three now required in this district. And the same is true of the blacksmith; carpenters and painters might be similarly employed to great advantage. In the artillery, these men should be assigned to districts; in the cavalry and infantry such of them as are necessary should be regimental employees as far as possible.

2. The reduction of the number of men required to do any given class of work, would be in the direction of an additional economy. One man, whose particular business it is to do a certain thing, and that thing only each day, will accomplish more, and will do it better, than any five soldiers, not the same from day to day, and whose principal business is, or is supposed

to be, something which has not the remotest relation to the work in hand. A man skilled in any work, no matter how ordinary, can do a great deal more than one who is not.

3. A great advantage would result from the men of the General Service Corps being permanent employees, which enables work to be continuous at any post, notwithstanding changing garrisons, transfers, discharges, etc., and this refers to the keeping of records as well as to the manual labor outside. If routine duties leave any part of the day to the minimum number of men required, there are always permanent improvements to be made at every post which would give occupation. Transfers should be possible of any excess of one class at any Post to another in the same district.

4. It would also be an inducement to men to remain in the service, because it offers more chance for advancement, and suitable employment after retirement from the active service. For the same season, it would be an incentive to enlist. Married men, particularly, would be benefitted, as they could buy or rent quarters near their posts (if such were not furnished), and would do so, if assured of permanent employment without the frequent changes of station, now inevitable, Many excellent soldiers who marry after one or two enlistments, are compelled to leave the service on account of the expense of changing station and hiring quarters at each new post; these men would be retained in the General Service Corps.

The popular idea of a soldier's duties, formed largely from observation when he parades in town, is far from accurate, especially in the case of the coast artilleryman. It is my opinion that many men who would make excellent soldiers do not re-enlist on account of the hard work, not related to the military service, which they are surprised to find themselves called upon to do, and some of which they would decline to do in civil life. This work is continuous and imperative, and unless someone else is provided, soldiers must do it.

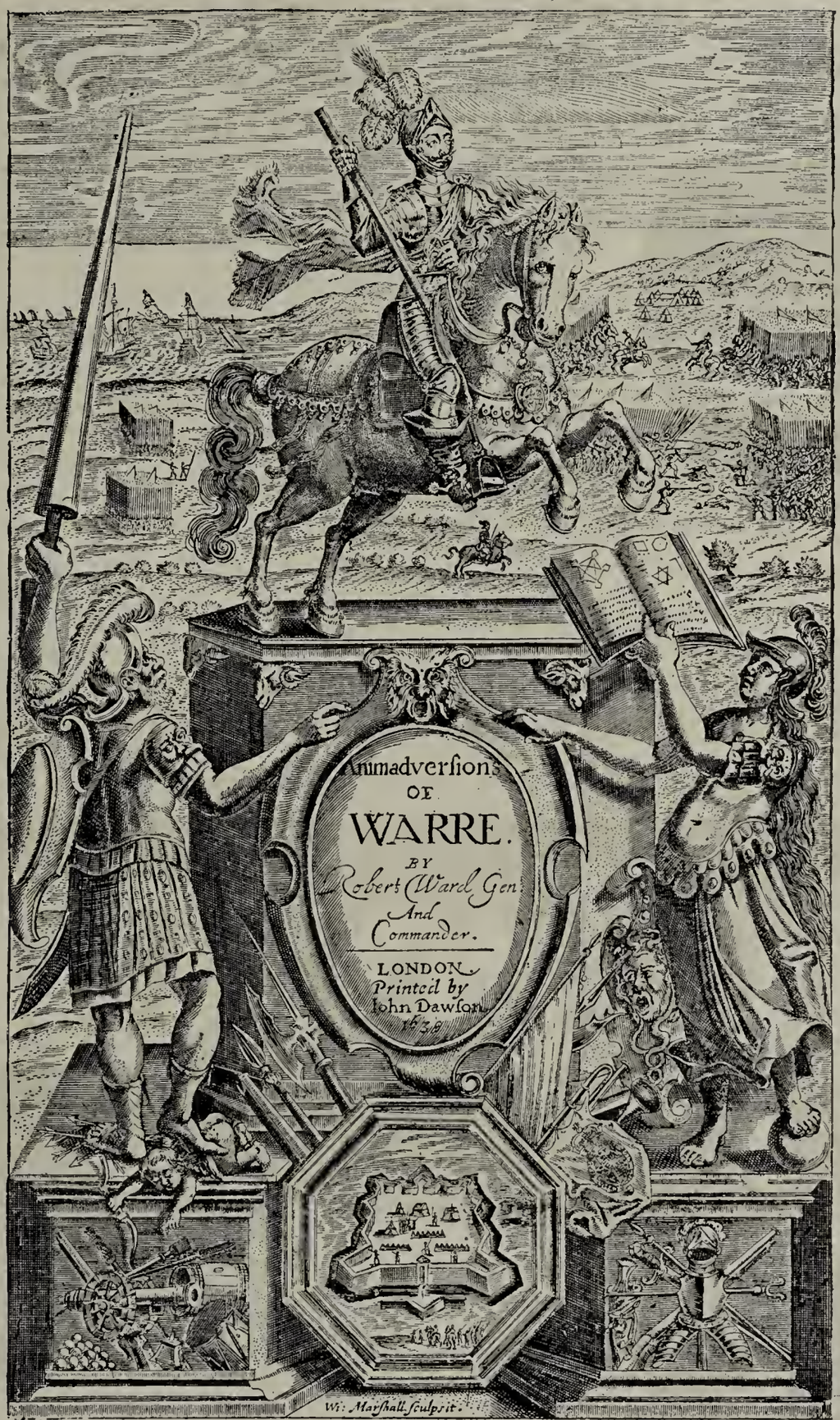
5. This method would provide for the expansion of the peace establishment at the outbreak of war, and thus assure a trained personnel, at the time when it is most needed. It would also return to civil life after they tired of the army, a well-trained, well-disciplined body of men, who were graduates of the best school in the world in which they could matriculate; which would make the army more popular, a result by no means to be despised.

It is believed that this experiment might be tried under existing laws, in some district, by detailing the men now employed in this work, under several different officers at each post, on extra duty, under one officer for the entire district, or one in each post, who would have charge of all supply work as indicated above. I am confident that we could get better service in every way. Better military service, because men will take more interest in their professional duties and have more time for reading, study and recreation; hence we would have more gunners and fewer deserters. Better and more economical fatigue service, because this re-organization of posts on a business basis would greatly reduce the number of persons required for this class of work. We should also have less trouble in getting suitable recruits, if we thus increase the attractions of the service, instead of mistakenly lowering the standard for enlistments.

This does not pretend to be a perfect scheme, a perfect solution of a vexing and perplexing question, ready for adoption, but only a suggestion, the discussion of which by those experienced in such matters, in case it is deemed worthy of discussion, may, it is hoped, lead to practical results in proportion to the importance of the subject.

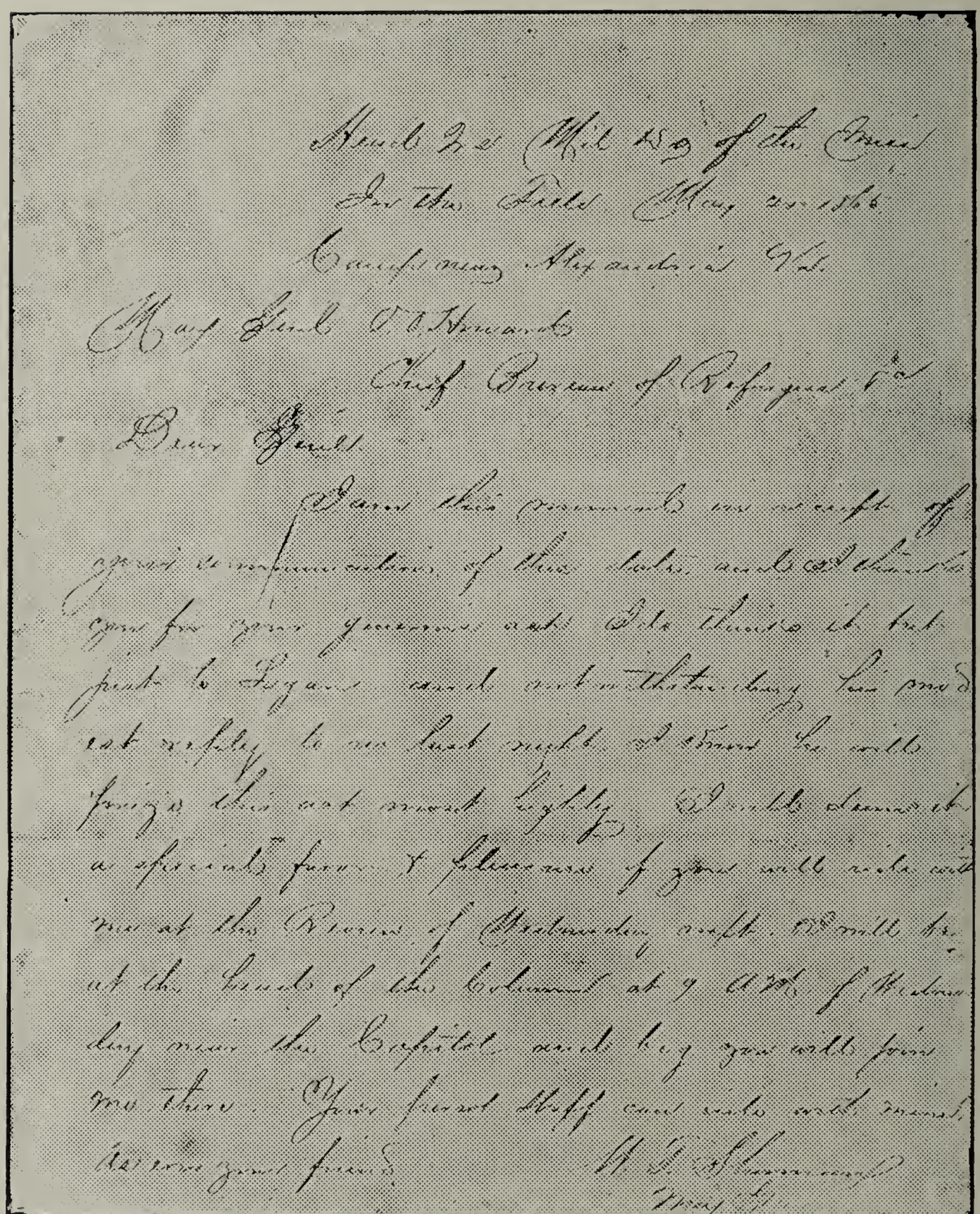
The artillery hits the target (sometimes), but "scatters," too much; running off, on the one side, into too much minutiæ of non-essential, theoretical detail; and clear over the edge, on the other, into work, which, although necessary, is not military. This is a violation of that excellent principle for which many of us have acquired a great reverence—the "Independence of Function." Ten years ago this was not a matter of such vital importance to our then methods and appliances—but "times have changed."





Historical Miscellany.

A BELATED COMMUNICATION.*



*We are indebted to the Editor of the Hartford *Courant* (at Gen. Howard's request) for the above facsimile of a letter from GEN. SHERMAN to GEN. HOWARD, which, after nearly forty years, only reached its destination Dec. 8, 1904, having fallen into the possession of a gentleman of Hartford, Conn., as a relic of the Civil War. (*See next page.*)

AN ECHO OF THE CIVIL WAR.

(The Hartford Courant.)

IN a few days Gen. O. O. Howard, who lectured at Trinity College Thursday night, will receive at his home in Burlington, Vt., a letter written to him by Gen. W. T. Sherman nearly forty years ago, and which he never saw until Friday in this city. General Howard was the guest of Prof. John J. McCook while here, and Friday morning, before the general left, Horace B. Austin, of this city, called on him and showed him the letter of the existence of which he was not previously aware. By a singular coincidence, General Howard, a few minutes previous at the breakfast table, had been telling Professor McCook about the circumstances which were directly connected with the writing of the letter. The letter is as follows: (*See facsimile.*)

"Head Qrs. Mil. Div. of the Miss.
"In the Field, May 20, 1865.
"Camp near Alexandria, Va.

"Maj.-Gen. O. O. Howard,
"Chief Bureau of Refugees, etc.

"DEAR GENERAL—I am at this moment in receipt of your communication of this date, and I thank you for your generous act. I do think it but just to Logan and notwithstanding his modest reply to us last night, I know he will prize this act most highly. I will deem it a special favor and pleasure if you will ride with me at the Review of Wednesday next. I will be at the head of the column at 9 A. M. of Wednesday near the Capitol, and beg you will join me there. Your personal staff can ride with mine. As ever, your friend,

"W. T. SHERMAN, Maj. Gen."

At the time of the Grand Review at Washington, D.C., Wednesday, May 24, 1865, Gen. "Black Jack" Logan rode at the head of the Army of the Tennessee and Gen. O. O. Howard, the commander of that army, rode beside Gen. William Tecumseh Sherman, who commanded the Military Division of the Mississippi, in which the Army of the Tennessee was a subordinate command. Of course, General Howard as commander of the Army of the Tennessee was entitled to ride at the head of his troops, and many wondered why he did not, and there was considerable speculation as to why Logan superseded him in that position.

Logan was the senior corps commander in the Army of the Tennessee when there came a vacancy in the command of that army. Upon the recommendation of General Sherman, General Howard was called from the East and given command of the army. Logan and his friends felt rather "sore" over that, as they thought that he should have been appointed. Logan had a reputation as a fighting general, but he was a volunteer officer and Howard was a West Pointer, and while both were brigadiers, with Howard ranking,

the rank of major-general was conferred on Howard and he got the command of the army. This was in the spring of 1864.

A few days, possibly a week, before the grand review in which so many thousand Federal soldiers participated, Sherman sent for Howard, who was one of his subordinate commanding officers, and suggested that he should permit Logan to ride at the head of the Army of the Tennessee in the review. Howard was naturally much surprised at the suggestion and expressed himself so to General Sherman, asking if it was not a peculiar request that he should relinquish the command of that army on that great occasion. Sherman urged that Howard make the concession to Logan, who was very popular with the troops of the army, and finally appealed to Howard's well-known Christian spirit in urging him to turn over the command to Logan for the review. Howard's reply was a characteristic one: "Since you, general, my commanding officer, request it and appeal to me in that way, it shall be done," and it was.

* * * * * * * *

It was on Saturday, May 20, five days before the Grand Review, that Sherman wrote to Howard the famous letter which is reproduced here for the first time. The letter never reached Howard, consequently he did not report to Sherman to ride beside him as requested in the letter. Instead, Howard rode with his staff on Sherman's staff. Sherman was looking for Howard and rode by the staff, but did not see him, and Howard, ignorant of the letter, was not looking for Sherman. Later on, while the column was moving, Sherman inquired of his adjutant-general, "Where's Howard?" and was told that he was riding on his staff. The general, hero of the March to the Sea, sent an orderly to Howard requesting him to ride up and take a position beside him, and Howard complied.

HOW THE LETTER CAME TO HARTFORD.

Years ago, Mr. Austin's father, the late Thomas H. Austin, of Suffield, gave the letter to his son. It came into his possession through a man named B. Oliver Raines, a Southerner who served in the Union Army, who was detailed as a clerk or in some clerical capacity at Sherman's or Grant's headquarters. How he obtained it is not known, but it is supposed that instead of being delivered to General Howard the letter was mislaid and was found in packing up after the review, and was confiscated by some servant or camp hanger-on. It has hung in a frame in Mr. Austin's house for several years. Thursday night Mr. Austin went to Alumni Hall to hear General Howard; while there thought of the letter, and decided to show it to the general. He ascertained from President Luther that General Howard was the guest of Professor McCook and called on him at the latter's house. He was as much surprised as was the general when he learned that Howard had never seen the letter before. General Howard readily identified General Sherman's handwriting and was sure of the authenticity of the letter. * * *

REMINISCENCES OF MAJOR-GENERAL JOHN GIBBON.

By Captain Henry P. Goddard, Late 2nd Army Corps U.S.V.

ON Monday, February 10, 1896, the remains of Gen. John Gibbon were laid to rest in that most beautiful of National cemeteries, at Arlington, Virginia. By a co-incidence, the grave in which he was buried was within one hundred feet of the very spot on which his tent was once pitched, early in the Civil War. The body had been escorted to the Acqueduct Bridge by all the regular forces on duty in the District of Columbia, and from the bridge to the cemetery by the four companies of cavalry stationed at Fort Myer. After the body had been placed in the grave, a brief but eloquent address was delivered by his old comrade, Major (since Brigadier-General) Charles A. Woodruff, of the Regular Army.

Just three weeks and one day previous, General Gibbon had been my guest at dinner, at my own house in Baltimore, where he had refused to tell any stories of the Civil War "lest he disabuse my only son of the idea that his father had any help in suppressing the Rebellion," but had delighted us all with his stories of his services in the various Indian wars. At that time he reiterated a remark that he had before made in a public address to the effect that one of the most perfect gentlemen that he had ever met, and a man who was ever welcome at his own house, was Chief Joseph, of the Nez Perces Indians. To those who know the history of General Gibbon's campaigns against that famous Indian Chief, this remark reflects equal credit upon both of them. He also told us the story at length of his Big Horn campaign without egotism or self-assertion. The only remark as to his personal part therein that was at all significant, was his statement that although the cold was intense the night before the attack, he did not dare stamp his feet lest the noise should arouse some watchful Indian picket.

It was at this dinner that he told of an interesting experience when, as Lieutenant Gibbon, he was one of the few officers stationed at an inland post in Florida, to whom there came one day in flight, a fisherman who had fled from his island habitation on the approach of the Indians, who had occupied his island for some hours. He kept in hiding while they were there, but when they left, returned to his hut to find only a white flag mode of crane's feathers mounted on a little staff about two feet long, surmounted by a few beads and a piece of tobacco. Taking this with him he brought it to the army post, which he reached after a three days' journey, in a rowboat. None knew the significance of the flag until it was shown to a sick officer in camp who was thoroughly familiar with Indian signs and languages. Summoning the fisherman, he asked: "Did the Indians leave no other

sign?" "Nothing, except a few marks in charcoal on a board." "What were those marks?" "A circle, and three straight lines." "On which side of the circle were those lines?" "The left." "Bring me an almanac," said the sick officer. When this was done and the book consulted, he said: "I understand now. That circle represents the full moon and three marks to the left that three days *after* the next full moon the Indians will return for an answer. Has anyone from our army been among them lately?" He was informed that officers had been through their country leaving beads and tobacco at various points.

When assured of this, he said: "The message is clear. It means that in three days after the full moon the Indians will come to treat with us for beads and tobacco." As the moon was, full on that day, Lieutenant Gibbon and a party started at once, and on the third day found the Indians back at the island and made a treaty with them. General Gibbon then produced and showed us there, and later at my own house, the little flag of crane's feathers which he always greatly valued.

He talked at length of a paper by Col. (since Major-Gen.) R. P. Hughes, published in the JOURNAL of the UNITED STATES MILITARY SERVICE INSTITUTION, for January, 1896, in which that author, a brother-in-law of Gen. A. H. Terry, asserts positively, that General Custer brought his own fate upon himself in the Big Horn campaign, by direct disobedience of the orders of General Terry, under whom he was serving, and by not keeping his command in touch with that of the column commanded by General Gibbon. The entire drift of the article is very severe upon General Custer and complimentary to General Gibbon. Notwithstanding this, General Gibbon asserted that he did not think it was altogether fair in that it had not make sufficient allowance for the discretion allowed to General Custer in command of a separate detachment. Moreover, said he, "General Custer is dead and cannot tell his side of the story, or of the motives which influenced his action, which I think ought to prevent us from severely criticising his course."

I replied: "General Gibbon, did you not tell General Custer 'not to be too greedy' when your commands separated on that campaign?" "Yes," said he, "that was because I knew that he was always ready to fight, and felt that he should know that I was ready to help him." The magnanimity of General Gibbon in these comments is only equalled by that shown by the late General Terry, who during his own life, bore ill-deserved criticism rather than to publish his side of the story, lest it reflect upon the dead Custer.

On the night of January 20, 1896, on the invitation of our common friend, Gen. Bradley T. Johnson, of the old Confederate Army, I attended with General Gibbon, a lecture given upon the "Battle of Gettysburg," before a Confederate Society, by William L. Royall, of

Richmond, Va. The speaker attempted to show Longstreet alone responsible for the Confederate defeat in that battle. His entire line of argument and comment was distasteful to General Gibbon, who kept up a running fire of criticism in my ear that was as interesting as amusing. As soldiers of the Second Army Corps, neither of us was disposed to accept, without qualification, the assertion that if Longstreet had acted as promptly as Lee desired, the Army of the Potomac would have been knocked into smithereens at Gettysburg. When Mr. Royall said, "none of the corps of the Army of the Potomac had reached Gettysburg by 7 A. M. on the morning of July 2, 1863," General Gibbon ejaculated, "H——. I had the Second Corps on the field at 6 A. M."

After the lecture, a party of us adjourned to the University Club in Baltimore, where General Gibbon gave us all a very interesting account of the Midnight Council of War held by General Meade on the night of the second day of the Battle of Gettysburg. In this account General Gibbon emphatically denied that General Meade made a single suggestion of utterance indicating that he thought of retreat. In this, he is in direct accord with the statement always made by General Meade himself, and in direct opposition to the assertions made by Mr. Royall. A detailed account of this council of war was written by General Gibbon some years before his death and published in the "Battles and Leaders of the Civil War," published by the Century Co., of New York.

In 1895 General Gibbon was the orator of the day at the re-union of the Society of the Army of the Potomac, at New London, Conn. His oration was of exceeding interest, and at the dinner table the same night he told some excellent stories. One was of his being presented to President Lincoln at an army review, shortly after the Battle of Fredericksburg, where President Lincoln took his hand and said, "Are you the author of the 'Decline and Fall of the Roman Empire?'" General Gibbon was the youngest general officer present and blushed so deeply at this that Mr. Lincoln kindly added, "Never mind, General, if you will only help me write the history of the decline and fall of the American Rebellion, I will be satisfied."

General Gibbon was always fond of Baltimore, where he had married his wife, and whither he was brought severely wounded after the Battle of Gettysburg. He spent the last winter of his life in that city, and was frequently at the University Club in which he was most popular, and where he delivered a lecture upon his Indian campaigns only a few weeks before his death. After a political revolution in Maryland, his name had been suggested as one of the police commissioners of Baltimore; Personally anxious for his appointment, I consulted him, when he replied that he would never seek the office but would accept it if tendered, and if appointed would do his best to give Baltimore a model police organization. When questioned concerning his

legal residence and his politics, he replied: "I own a farm in Montgomery County, Md., but have never voted in my life. I have always been a Democrat, but during the war never talked politics as I felt there was but one issue, and that the suppression of the Rebellion."

Although many of his nearest relatives and closest connections were Southern, he was always thoroughly devoted to the Union cause, and as gallant a fighter as we had in the Union Army. He never concealed his sentiments, nor minced matters in discussion; yet among his best friends after the Civil War, were many of the most distinguished of the old Confederate soldiers, such as Gen. John B. Gordon, Bradley T. Johnson and others. After his death the latter wrote of him: "he was a manly, generous, chivalric gentleman. It will be many a day before we look upon his like again."

General Gibbon, at the time of his death, was Commander-in-Chief of the Military Order of the Loyal Legion, and on the Saturday before his death talked to me of the pleasure he anticipated in attending a meeting of the Wisconsin Commandery the next week. He had hoped to start on Monday and I bade him "Good-bye" on Sunday, as I walked home with him from the club, and shook hands with him as we parted. Little did I think that that was the last time I should touch that noble hand; but that night he was taken ill with pneumonia, of which he passed away on the following Thursday.

In the address, which was touching in its sincerity, delivered when the body was buried at Arlington, his old comrade, Major Woodruff, pronounced what is the best obituary of John Gibbon when he said:

"General Gibbon belonged to no church, but he believed in the immortality of the soul, and as he believed so he lived; an honest, pure, upright life, respected and guided by God's commandments and the Golden Rule"





THE VON LÖBELL ANNUAL REPORTS ON THE CHANGES AND PROGRESS IN MILITARY MATTERS IN 1903.

PRÍCÉS FROM THE GERMAN, BY LIEUT.-COL. E. GUNTER, P. S. C., LATE EAST LANCASHIRE REGT.

(*Journal Royal U. S. Institution, London.*)

II.—TACTICS OF INFANTRY AND OF THE COMBINED ARMS IN 1903.*

THE EXPERIENCES OF THE SOUTH AFRICAN WAR.—The Report repeats much that has been said before on this subject, and draws attention to the well-known publication by the German General Staff—"Episodes of History. Experiences of War beyond Europe. Colenso, Magersfontein, etc."—of which the conculsions, it says, confirm those arrived at in the Von Löbell Reports for 1902. As a *précis* of this publication was given in the *Journal* for May, 1904, p. 586, it need not be further alluded to here, for the report emphasizes many points dwelt on in it, especially as regards our fear of incurring losses, which were therein dwelt with, and the want of resolution in not attempting to carry by night, positions assailed in vain by day, etc. Experiments were made in January, 1903, with troops dressed in different colored uniforms, and it was observed that on the whole khaki and gray-green were the least conspicuous. Troops lying down with knapsacks on were much more so than without.

"On the whole," it says, "we may look with equanimity on the South African experience. The conviction is being arrived at that the principles of the German Training Regulations, properly understood and applied, would have undoubtedly conquered the Boers. Nothing is more fatal than to inculcate the *impossibility* of frontal attack in the open as an unconditional principle. Now more than ever does the personal element assert itself side by side with fire effect."

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*This portion from the pen of the well-known writer, Major Balck, German General Staff, is of especial interest.

INFANTRY.

GERMANY.—In the new (third) edition of Major Balck's *Tactics*, Vol. I, the latest regulations for training of the chief European armies are given, and the experiences of the Boer War summarized.

The "Tactical Problems," of General Reisner von Lichtenstern, which appeared in the *Jahrbücher*, dealt with the psychology of the battle-field. Col. von der Goltz, has in his "Training for Battle," shown how drill and education can be adapted to this end.

FRANCE.—A memorandum issued by the third section of the French General Staff shows the views taken of the state of infantry tactics. This bears an impress of the present ideas promulgated by General Kessler in 1902.*

It states that, taught by the experiences of the Boer War, the British infantry attack was revised by Lord Roberts in 1902. It does not, however, solve the problem of how to pass over the death zone extending 1000 metres from the defenders' position. Germany seems only now to have learned the lessons assimilated by the French, thirty years ago. In Russia, though its formations have not been altered, the army seems to have clearer ideas than any other of the requirements of modern battle. In Austria they have contented themselves with increasing the breadth of front, and the advance in narrow columns.

Infantry must, says the memorandum, avoid open ground when within effective artillery range, shooting ground and formations which shall conceal their advance. Groups, not unbroken lines, must be formed, which, as long as they can do so under cover, advance uninterruptedly without firing or lateral movement. When it is impossible to continue the advance without firing, this must be opened. To strengthen this, they are then reinforced by other groups until no more rifles can with effect be brought into line. Forward rushes are not to take place on every reinforcement, but only when the defenders appear shaken. Officers and non-commissioned officers choose the fresh positions for their sections, etc., and lead them forward. Open ground is to be crossed by sections, groups or by creeping man by man. The groups, supported by their reserves and eventually strengthened by parts of their second line, gradually gain ground, leaving lateral spaces between them, which are covered by the troops in rear. Thus isolated combats, through which the leader will have obtained a clear idea of the situation, will be fought. He can then support with his reserves those points of attack which seem to have the best chance of penetrating the position, or choose that portion of it against which he will throw his main force. This is to be brought up under cover of the advanced fighting bodies without halting, till it can carry the latter forward to the assault with it. These being the guiding principles of the infantry combat, no subdivision into firing line, supports and reserves is required. Distances will be kept according to the nature of the ground, and the greatest latitude will be left to all leaders. A wider front will be taken up in attack as well as in defence.

These views as to the nature of modern attack are not quite in accordance with the existing "infantry training," so we may expect to see this altered. In the camp at Chalons it was tried, and a reporter of the *France Militaire* says that thin firing *lines*, with four or

*See the *Journal* (R. U. S. I.) for October, 1903, p. 1156.—E. G.

five metres interval, and *simultaneous* movements of the skirmishers with rapid firing, were the chief characteristics observed, with an unmistakable disinclination to use shelter-trenches.

In the New Field Service Regulations *avant-postes irrégulières* (March "Outposts") are used, with groups of four, six or eight men, called *postes à la Bugeaud* which push forward single or double sentries about fifty paces. These can be used instead of the chain in broken, close ground, or in front of the line of outposts, like the Russian Sekrety.*

In marches, much stress is laid on order and discipline. The importance of the careful, individual training of every man in an army is insisted on.

Officers are to take care that men only slightly wounded do not retire out of action, but are attended to as early as possible, and that no fighting men, but only the stretcher-bearers, are used as carriers.

JAPAN.—The infantry training is carried out on German lines (excepting that fours are formed on the French system). Formerly, whereas the restricted parade ground induced an adherence to too close formations, we now see a tendency in the larger practice grounds to over-extension.

The *German Infantry Attack*, a brochure published in the *Militär Wochenblatt*, seems to have been taken as a guide to their training. In this they displayed excellent fire-discipline, and coolness in shooting, with quick powers of observation.

It seemed, however, says the same eye-witness, that there was greater attention paid in attack to the simultaneous advance of the whole line than the utilizing by individual units of the opportunities presenting themselves. There was a decided tendency to the offensive.

RUSSIA.—The "infantry training" of 1900 is still in use. It differs but little from the previous one. "*Jagd Commandos*" (special sharpshooter companies) continue to be trained, though much opposed. It is considered that there are more opportunities now for the employment of especially trained men, who, being good cyclists, judges of distances, etc., are particularly uesful in the first line. But as these may not always be available at the critical moment, it is questioned whether their chance employment makes up for depriving the companies of their best men as "specialists." Their marching performances were remarkable.

The *Meldereiter* (mounted messengers) are no longer taken from these special sharpshooters, nor are they to be employed in scouting, but exclusively as orderlies.

GERMANY.—The imperial maneuvers of 1903 took place in the vicinity of Merseburg between the 4th and 11th Corps, with the 'A" Cavalry Division attached, and the 12th and 19th Corps, with the "B" Cavalry Division attached. An infantry general commanded the former, and a cavalry general the latter. The cavalry were in greater proportion than usual. On the 11th of September, the German Emperor united the two cavalry divisions and three infantry army corps under his command and led an attack upon a position held by two army corps.

The heavy artillery of a field army has now been assigned its place on the march after experiments as to its being able to keep up with the marching columns. Maneuvers have shown the importance of this

*These do not differ materially from the British group system.—E. G.

arm, not only for the attack on entrenched positions, but also for the encounter battle.* As a rule, it is to follow the main body of the infantry in a column. When the column, however, is marching with a view to an attack upon an entrenched position, it will be as far forward as the commander judges necessary to admit of the timely action of the guns. Bearing in mind the great depth of a battalion† of field howitzers (1100 metres without and 1500 metres with wagons) it is considered as a rule best to treat them as field artillery as regards their place in column of route.

Much has been written in 1903. Two important works issued by Section I of the German General Staff, "Breaking off Actions," and "Success in Battle," were issued. The difficulties of the former have increased, and are only possible when troops remain echeloned in depth. It is especially difficult for the defenders, for on any cessation of their fire the attackers may storm the position. But it is also difficult for the attackers, as any pause in their advance has almost the effect of a retreat, and offers an energetic defender a decided advantage.

Battle situations such as depicted in these studies, however, partake more of the character of "Reconnaissances in Force," which are according to modern views, seldom advisable now unless increased fire-effect or peculiarities of ground exceptionally demand them. The increased number of guns brought into action now and their greater effect may seem to favor it, but as now the fire-effect of thick swarms of skirmishers is also much greater, it is difficult to break off this when forces are engaged at medium distance.

It is an essential condition to success in battle that it must be arranged beforehand to bring the main strength to bear on the enemy's weakest points—that is, his flanks. In battles, on a great scale, however, once the commander of an army has engaged his army corps he can no longer influence the battle. The issue lies with his subordinates and his troops. It depends on the prudent energy of the former and the capabilities of the latter. The leading idea of the volume is that none of the great commanders always acted in the same method.‡

Lieutenant-Colonel Kreuzinger's "Problems of War," which are based on a philosophical study of Frederick the Great's and Napoleon's victories, are mentioned, also Colonel Hanschid's "Applied Tactics," and a "Collection of Tactical Exercises and Their Solution," by Captain Hoppenstedt (Mittler). The third and fourth volumes of Major Balck's exhaustive "Taktik," third edition (Eisenschmidt), are quoted.

FRANCE.—General Langlois and General de Négrier, both members of the Supreme Council of War.§ and Inspectors-General of troops have expressed their different views in regard to battle tactics. Last year¶ we drew attention to the opinions of General de Négrier and of General Kessler, which favor long, thin firing lines, small columns working forward together, combination of frontal and flank attacks, dismounted action of cavalry, etc. Opposed to his are General Lang-

*The present Russo-Japanese War has demonstrated more than ever the great tactical importance of heavy artillery.—E.G.

†A battalion of Fuss-Artilerie is from four to six companies strong.—E.G.

‡The Duke of Wellington's well-known dictum as to this will be remembered.—E.G.

§General Langlois has retired since the above was published.—E.G.

¶See the *Journal* (R. U. S. I.), October, 1903, p. 1134.—E.G.

lois' ideas, with which General Brugère is in accord, as is also General Bonnal. His views are briefly:—

1. Frontal attack is more difficult. Hence wider extension and necessity for a higher moral and intellectual training of the soldier.

2. Improved small arms favor enveloping flank attacks, which necessitate greater maneuvering power.

3. Improved artillery fire favors frontal as well as flank attack.

4. As extension becomes greater, so much the more must the decision be sought or in powerful concentration against one portion of the front.

General Langlois therefore considers the German Emperor's plan of breaking through at one point with heavy cavalry masses as by no means a parade maneuver merely calculated to raise the spirits of his cavalry, but a well-thought-out and practicable plan of action.

5. The defence must be conducted more by depth than by breadth as few troops being shown as possible at first, the bulk being kept in hand to fall on the attacker when he is exhaused by his long advance under fire. To this end, mixed detachments are to be pushed forward by the defenders to withdraw slowly fighting and leading the attacker into the snare prepared for him of a powerful artillery position covered and concealed by a few weak skirmishers only.

He considers the value of the more permanent works to have diminished, and that of field works to have increased, the latter being in the form of shelter-trenches many lines deep.

To sum up the Langlois proposals, they may be said to be the application of the Napoleonic mass principles modified according to the requirements of modern war. He rightly rejects the idea that the tactical surrounding is the only possible method of attack. He believes, relying on the experience of Plevna, that frontal attack is still possible, though difficult. He does not consider it sound to look on the experience of the Boer War as proving the contrary. He agrees with General de Négrier in the difficulty of thorough reconnaissance, and thinks this may be overcome by pushing forward mixed detachments, while de Négrier, advocates the use of mounted infantry only. Both agree in the necessity for the thorough co-operation of infantry and artillery.

But, after all, the main difference in their views is that de Négrier upholds the necessity of the tactical surrounding, whereas Langlois advocates massing to break through at some point of the enemy's line.

Russia.—A strongly developed tendency to the attack is remarked on by allr eporters,* but this apparently culminated in a number of partial engagements often lacking in unity of action.

The attack of the Russian Army is essentially a normal one—that is, each army corps attacks precisely as the others do. The firing line, at the outset weak, is continually reinforced. The advance is by rushes by strong detachments moving on a broad front. The nearest reserves are kept rather far back in open order, but the great reserves advance in strong columns, keeping step, more often with bands playing into action even under heavy artillery fire.

The cavalry were given plenty to do, as the two sides were 200 kilometres apart (125 miles). The umpires had to see that the infantry carried their packs full, and that the squadrons took the prescribed number of horses with them and did not leave them behind on any pretence. The cavalry division of the guards particularly dis-

*This does not seem hitherto to have maintained itself in the Russo-Japanese War.—E. G.

tinguished itself, making a night march along bad roads, and overwhelmed a regiment that had pushed forward in fancied security to occupy Pekow. The cavalry, with its accompanying horse artillery, often fell upon the flanks of the hostile marching columns.

The train was reorganized in 1903. Part of the long division provision trains have been now kept back and united in an additional corps provision train. On the other hand, all the three-horsed divisional train wagons have been changed into two-horsed wagons, reducing the weight carried by each to 458 kilos (8¾ cwt.). This increases the number of vehicles from 168 to 210.*

Each body of troops has its regimental transport. The divisions have a divisional train; each corps (including the cavalry corps) a corps train. The provision train of a division is in five sections, that of a corps in four sections.†

THE IMPERIAL MANEUVERS took place near Pekow, under the Grand Duke Vladimir. Special mixed detachments were much used to lay ambushes, carry out attacks on convoys, trains, depots, etc., to break up roads, destroy bridges, etc., on the enemy's line of march; in fact, to play the part of guerillas with all their energies. These detachments were to be quite independent of the bodies of troops from which they were detached, but, while seizing of their own initiative under their own leaders, every opportunity of harrassing the enemy within their *rayon*, they were to keep their own side informed as to his whereabouts.

CAVALRY TACTICS.

GENERAL.—In general the conviction is making its way that cavalry has gained in importance rather than lost by the improvements in modern arms of precision. Even in England, where, owing to the value of dismounted action being over-rated, cavalry is only employed tactically as mounted infantry; Lord Roberts is careful to try and obtain the best officers for the cavalry arm on account of the great intellectual as well as bodily demands which in the present day reconnaissance makes on it. Theoretically, the cavalry of all European armies sets a higher value on dismounted action than before the South African War. Practically, this has only been carried out on a large scale in England, France and Russia; in Austria-Hungary rather less so, and in Italy and Germany at their great maneuvers very little.

First, the British cavalry lost the lance, received the infantry long rifle as their chief weapon, and actually rode to the autumn maneuver of 1903 without swords.

In France the greatest stress is laid on fire action on foot; but the use of *l'arme blanche* where feasible, is not rejected.

These two are the only countries which have thought the improvements in firearms necessitate radical changes of tactical formations when within effective hostile range.

In Germany, Generals v. Pelet-Narbonne and v. Bernhardi declare a more thorough training in the shooting of cavalry even in large bodies, necessary. In all countries attempts are being made, by attaching to them machine guns, mounted infantry, and cyclist companies, to increase the fire power of bodies of cavalry.

By improvements in cavalry rifle training, by better weapons and by increased ammunition supply, they hope to enable dismounted

*For details see *Militär Wochenblatt* No. 136, and *Internationale Revue*, January, 1904.

†For details, see *Streffleur*, December, 1903, and *Internationale Revue*, No. 431.

cavalry to carry on a prolonged fight, either offensive or defensive, against infantry. This is delusive. The withdrawal of the horse-holders and their escort and of the mounted scouts, reduces to a small number the rifles that can actually be brought to bear even by a whole cavalry division, so that no great effect could be produced on the flanks even of modern armies where reserves would be certainly echeloned. In scouting, outpost service, and in detached fighting, cavalry may often act dismounted with advantage. Even in battle it may be better in certain cases to let them make use of their carbines than to await inactive behind a hill that opportunity for attack which has so often been missed. *Cavalry will never obtain great successes with their rifles*, but only when mounted, by utilizing their great speed and their opportunities for surprise. If von Bredow's cavalry had possessed at Mars-la-Tour a long-ranging rifle, and had dismounted to fire, they would scarcely have stopped a single infantry regiment; whereas, by their so-called death-ride, they stopped the advance of an army corps. As regards losses, it has been stated that at Eylau and Esslingen, Napoleon's reserve cavalry corps lost more than the whole of the German cavalry in eight months of the War of 1870–71.

Every victory in which the cavalry takes no part, every defeat which the cavalry does not sacrifice itself to avert, must be looked on as a reproach to the cavalry of any army.

For the battle, cavalry masses must be carried forward to threaten the enemy's flank far in advance of their own flanks. This will enable large bodies of artillery to get round to concentrate their fire on the enemy's flank. In 1870–71 there was often no room for the batteries to deploy in front. Owing to the general increase of the artillery, this will now more than ever be the case; their obvious employment against the flanks is indicated.

Their effect against the hostile reserves and in enfilading their lines of batteries will be much greater than that of frontal fire against shield-protected guns. Co-operating with them, the cavalry will work round the enemy's flanks and protect their own.

The writer reaffirms his predilection in favor of the lance, and says: The following powers arm their cavalry with the lance:

Germany.—The whole of the cavalry, except the mounted rifles, are armed with hollow steel lances 11½ feet long.*

France.—Both ranks in seventeen dragoon regiments of the eight cavalry divisions and some of the other dragoons carry bamboo lances 10¾ feet long.

Italy.—The first ten cavalry regiments carry hollow steel lances 9¾ feet long.

Russia.—The front ranks of the Don, Oranberg, and Ural Cossacks carry lances of lancewood.

Belgium has four lancer regiments.

Turkey.—The thirteen regiments of Kurd Irregular Cavalry and many of the Indian native cavalry regiments carry them.

England.—The report gives in brief the memorandum of Lord Roberts which accompanied the order to arm all the British cavalry with the long rifle, but says that numerous advocates of the retention of the lance have written to the *Times*, etc., letters urging this, and among them Lieutenant-General Wilkinson. It reports that the sword is still to be carried for the *mêlee*, but that the greatest weight

*These appear to be much heavier than the bamboo lances.—E. G.

is laid upon shooting and dismounted action, which—and especially on rapid dismounting—the cavalry of high-lows and putties favor. The report draws attention to the efforts to abolish excessive luxury in the cavalry, and to the order allowing officers to use horses from the ranks.

AUSTRIA-HUNGARY.—In Austria great attention is being paid to the shooting of cavalry and to reconnaissance, in which the militia cavalry are trained very thoroughly each year. Long distances are marched, patrols sent out in full strength, detached, and contact squadrons practiced, etc.

A short account of the cavalry work in South Hungary and a more detailed one of the great cavalry maneuvers in East Galicia, near Komarno, with a good sketch-map.

The general impression of the Austrian cavalry was very favorable. The horses were fresh and in good working condition, the officers well mounted, the marches were regularly executed and in good time; the jumping was good. To one militia cavalry regiment only was exception taken as regards horsemanship and horsemastership. The reserve of horses system has worked well. There are now 26,000 trained horses used for training the militia cavalry. Machine-gun detachments took part in the cavalry maneuvers.

FRANCE.—An account is given (taken from the *Militär-Wochenblatt*) of the autumn cavalry maneuvers held under General Poulléau near Réthel, on the Aisne. The 4th and 5th Cavalry Divisions with engineers on bicycles, and the 2d and 6th Cavalry Brigade, one bicycle company, one section machine guns, and the 84th Infantry Brigade took part in these. The cavalry did not use much dismounted action, but attacked on horseback, and their general condition, riding etc., were praised; but greater rapidity of movement and better utilization of ground, adaptation of formations to it, etc., were demanded.

GREAT BRITAIN.—The autumn maneuvers of 1903 around Hungerford and on the Berkshire downs are described at some length in the report. The strenuous marching of General French's troops and the *élan* of their successful cavalry charge on the last day are much praised, as also are the quiet way in which all worked by signal, and the dismounted action of the cavalry. The signalling is especially commended.

ITALY.—The Italian Army received its new regulations for field service in 1903, in which the lessons of the Boer War are skilfully handled without exaggerating the advantages of the defensive or depreciating those of the offensive.

Cavalry divisions are to precede the army by one or two days' march in order to give the columns marching on an extended front, time to concentrate. If no cavalry division is available, then each column is to send forward its own cavalry for reconnaissance. On gaining touch with and reconnoitering the enemy, the cavalry may occupy and hold, dismounted, important points until the arrival of the infantry. The cavalry leader is to be allowed a free hand in action. While the effect of modern improved firearms is taken into account, so also is the moral value of cavalry action, if the right moment is chosen, and rapid decision and bold daring shown in execution.

Light artillery and cyclist companies are attached to the cavalry for pursuit, which is to be active and relentless.

Royal maneuvers were held in Italy in 1903 for the first time since

1899. Two armies assembled in the neighborhood of Venice. A northern army of five army corps (red) with a cavalry brigade and some Alpine troops, against a southern army (blue), which had three army corps, a cavalry division, and some Alpine troops. This cavalry division consisted of one lancer brigade and one light cavalry brigade (each of two regiments), two batteries of horse artillery, engineers, signallers, etc. Each cavalry regiment had twenty-four messenger pigeons with it. A small proportion of the latter reached home and were useful, their messages being at once telegraphed to their destination.

The work of the cavalry throughout is much praised.

FIELD ARTILLERY TACTICS.

GENERAL.—The expectation that the year 1903 would see all the prinicipal European armies rearmed with modern artillery has been but partially fulfilled. In certain States, especially in *Germany*, the results of experiments which shall enable them to adopt a gun, etc., fulfilling every possible demand, are awaited.

Only France has changed the tactical principles of artillery action in the fight in accordance with the possibilities of its new weapons.

The shield question is still being discussed; but the barrel-recoiling q. f. field gun seems to have established itself.

The report enters into a detailed defence of German light field howitzers,* which we have not space to reproduce. It says they are necessary to reach troops behind cover, enlarges upon the moral effect of their curved fire,† and says that the bugbear of the impossibility of carrying sufficient ammunition is a myth. It was found impracticable to rest content with one field gun for all purposes. The report therefore advocates their retention, and says it is even a question whether they should not form part of the artillery of all infantry divisions. It quotes from General von Hoffbauer's book on field artillery, published in 1903, which is founded upon the experiences of 1870–71, and which does not recommend the reduction of guns from six to four per battery, as the French have done.

FRANCE.—In France, notwithstanding the confidence shown in the 75-mm. (2.95-inch) Q.F. field guns, fears are gradually being expressed that the number of guns now in an army corps are not sufficient to cope with the Germans. *La France Militaire* thinks the number ought to be six guns per 1000 infantry, as in Germany. The question of motor traction for field guns as saving the cost of horses is being considered, and it is thought that, notwithstanding the expense, the number of guns may be gradually increased, as, though the German guns are inferior, there are many more of them, and they may be improved. This agrees with the opinion expressed in our previous reports, that though the number of guns in the batteries may be reduced, the total number in an army corps should not be.

A new issue of "Field Artillery Training" was issued in June, 1903, replacing that of 1901 (provisional).

The composition of the ammunition columns, parks, etc., and their place in the line of march is given.

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*Of 1898, calibre 4.1 inch. The batteries are attached to some of the infantry divisions.—E. G.

†The previous reports condemned the British 5-inch howitzers as having produced little effect in the Boer War, but enlarged upon the excellencies of the heavy howitzer (5.9 inch against entrenched positions.—E.G.

The report gives the various field practices held in 1903 and the criticisms on them, and says there was nothing to remark on as regards the French artillery tactics, at either the army maneuvers or the cavalry maneuvers of 1903.

GREAT BRITAIN.—The report devotes unusual attention to British artillery tactics. It reproduces pages of the artillery part of "combined training." It gives the remarks of Lord Roberts on the choosing of artillery positions at the autumn maneuvers of 1903 in detail, as well as extracts from the report of the Inspector-General of Field artillery in India for 1902–3.*

RUSSIA.—New field artillery regulations were issued in 1903 as the result of the experiences of those of 1899.

SWITZERLAND.—The report to hand of the Swiss maneuvers held in 1903 show that the batteries were well handled, and, on the whole, worked satisfactorily, the difficulties of the ground being energetically overcome. They were sometimes late coming into action, which is attributable to the *matériel* being somewhat heavy for the ground. Here and there want of proper co-operation with the infantry was observed, and such faults as change of position under heavy fire of superior artillery, etc., were noticeable. It is proposed to reduce the six-gun batteries to four, but with ten ammunition wagons per battery, which are to carry 800 rounds per gun, as will also the corps park ammuntion wagons.

A new mountain gun with recoiling barrel was tried, and gave results far more satisfactory than those of the old mountain gun. It proved a very light and handy weapon. It, however, requires four mules instead of three, which sufficed for the old pattern.

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*LONDON, Dec. 14.—Commenting on a long special article concerning the condition of the British artillery, *The Times* will say to-morrow:

"The thinking portion of the public will find some cold and tardy consolation in the article we publish to-day upon the rearmament of the artillery. It appears that with good luck we may hope to see the army provided two years hence with artillery fit to oppose that with which other nations are already provided.

"In the meantime, with the exception of eighteen batteries of quick-firing guns hurriedly bought in Germany during the Boer War, the British Army has no guns that would seriously count in modern war.

"Our field artillery would be hopelessly outclassed in range, accuracy, and rapidity of fire, which means simply that our batteries would be knocked to pieces before they could inflict any serious damage on the enemy.

"What is more, our infantry would be compelled to remain on the defensive because the artillery would be powerless to provide the conditions for a successful advance.

"We have again and again pointed out without avail that the Government of this country is carried on without scientific direction, even in those departments most obviously and directly dependent on scientific progress.

"This country follows the procedure of that edible the invertebrate lobster. At intervals the lobster casts its shell, and until a new one grows is absolutely helpless and has to conceal itself in a hole. That is our case, only we have no sheltering hole. We get equipment, usually in a hurry and at an abnormal cost, and then assume that it is the last word of science.

"We take no note of what science is doing until some fine day we discover that our equipment is as worthless for defense as Nelson's wooden walls would be against a modern ironclad."—*London Times–N. Y. Times.*

ARMOR AND WEAPONS OF THE DE DINO COLLECTION.—II.

By Isabel R. Wallach.

(*The Scientific American.*)

IN a previous article published in these columns,* the more prominent pieces of armor in the admirable De Dino collection, lately acquired by the Metropolitan Museum of Art, New York City, were described and illustrated. It is the purpose of the present brief review to tell something of the more important weapons, which add much to the historical value of that collection, and of some additional suits of armor.

One of the most splendid specimens of these medieval weapons is the Papal sword of Sixtus V, emblazoned with the arms of the haughty Albani. Other blades are here of rare Toledo and Milanese workmanship, showing the wonderful skill attained by the swordsmiths of the period. The wealth of decoration lavished upon blade, hilt and scabbard partakes of the goldsmith's art rather than that of the craftsman in steel. Great two-handed swords may here be found of dimension and temper that bear out the tales told of men cleft in twain at a single stroke.

But of all the knightly swords, the most valuable in the present collection, and the one that appeals strongest to our sympathies, is the magnificent blade of Aben Achmet. Sheath and steel are of rare Hispano-Moorish workmanship, resplendent with enamel and gold and silver filigree. It figured in a tragedy accompanying the fall of the house of Abencerrages and the ruin of Granada. Pathetically near the historic sword lies the elaborately-wrought Koran case of its liege, Boabdil the Unlucky, last of the long line of Moorish kings to reign in Europe. The pole arms of this period are characterized by brutal savagery curiously wedded to exquisite art. The heavy spiked mace, the enormous battle-axes and hammers, the torturing triple-edged pikes, amply justified the iron sheathing in which the warrior incased himself.

A curious and most interesting weapon is an elaborately gilded dagger, made in Germany in the latter half of the sixteenth century, and carrying a pistol concealed within its blade. The removable tip of the dagger forms the key which, inserted in the knob of the hilt, wound the wheel-lock. The latter is visible through the oblong opening at the upper end of the blade. A flint is attached to the under side of the band of *repoussé* that bridges the hilt. This bridge is movable, and, as it descends, it releases the spring that revolves the wheel, brings the flint in contact with the wheel, and sends a shower of sparks into the pistol beneath, discharging its bullet. The weapon is ingeniously contrived, and was no doubt highly prized by its owner.

Unlike the dagger, the Calendar hunting-knife, dated 1540, carries its firearm openly. Its German maker must have been proud of his clever handiwork, for boldly has he made it declare: "ICHENN.·. HAD .·. DISSE .·. KOLLENDER .·. GEMACHT." (Ichenn made this calendar.)

There is also exhibited a sword-cane once the property of Philip II of Spain. It has a Toledo blade of wonderful temper. Still another

*See J. M. S. I., Nov., 1904.

remarkable piece has a pistol dated 1612, which displays a complete double battery. The mechanism of the ingenious wheel-lock is clearly seen.

The harquebuses and pistols show how far the love of ornamentation was carried. Inlay of pearl and ivory and overlay of gold and silver, *repoussé* and incised work cover the stocks. The metal work of the weapon as well as its wheel-lock, key and powder flask, show treatment akin to that of the goldsmith's art.

Among the smaller weapons are specimens interesting alike for their beauty and ornament, and for the ingenious devices that insure the attainment of their fatal purpose. The early firearms attracted much attention, specially those in which the mechanism of the old-time wheel-lock is visible. Prototypes crude and curious, are here displayed of our modern rifle and double-barreled gun.

The finest specimen in the De Dino collection, so far as weapons are concerned, and, indeed, the finest specimen of its kind in the world, is a sword fashioned during the reign of Francis I. The hilt is wound with braided gold wire of extreme fineness and ends in the bust of a woman, the modeling and carving of which are perfect. Similar busts terminate the cross-bar, and a coiled serpent guards the end.

The exhibit of the helmets in the collection is likewise most comprehensive. Those who have read the previous article will recall the many types there illustrated. It may be fitting in this place, however, to call attention to the royal burginet of Henri II of France. Its sides tell in rich relief of the victory of Hercules. The casque forms part of the gilded armor he wore when as Dauphin he visited his royal father, Emperor Charles, confined a prisoner of war in Madrid.

In the previous article some splendid specimens of armor in the collection were illustrated and described. Moving from case to case of the collection, one cannot help noting how fashion changed in these steel garments, even as it does in ordinary dress to-day. The earliest suits show shoes ending in a cruel spike, with other spikes projecting from the arm pieces. A swift thrust from a foot or elbow thus armed was likely to leave an indelible mark. Later the square-toed shoe, supple and flexible, by reason of its many plates, came into favor. It is to be seen in the royal suit of Philip II of Spain, of blood memory in England and the Netherlands. Over the heart is the cross of Calatrava and d'Alcantara. It is hard to reconcile the meaning of this symbol with the ruthless persecution its wearer instituted in the Protestant lands he sought to conquer. A large portion of this richly-decorated suit, as stated by Baron de Cosson, formed a part of the collection of the Madrid *Armeria Real.* From this armory nine pieces of this suit were abstracted in 1839. The backplate, the breastplate (with its dependent pieces), footplate, and the defence of one forearm are added from a similar suit. The latter pieces formed part of the harness, of which parts are still preserved in the Madrid Armería, which appears to have belonged to a member of the family of d'Onata. The suit was made in Germany about 1554.

Still another suit belonging to Philip II is also displayed. Philip II was painted in this second armor by Titian and Rubens. A century later, Velasquez used it in his portrait of Count Benavente, now in the Prado Gallery in Madrid. This armor was fashioned by a German artist about 1550. The numerous pieces of richly-decorated armor in the particular case containing the suit and in a neighboring case formed a complete panoply of which the parts could be changed ac-

cording to the needs of its wearer. In the specimen illustrated, the tournament plates that reinforce the armor of the shoulder and face are added. The suit was probably made by Colman of Augsburg. The sword hilt in the left hand of the armor is of Spanish make, and dates from the middle of the sixteenth century. It is the work of Sohagun el Viejo of Toledo, the swordsmith of Philip II.

A very rare specimen is a florid and flamboyant suit with its grotesque visor mask. The puffing and slashing of the court dress of the day (1530) is imitated in the metal, and the anatomical lines are followed with admirable fidelity, even to the instep and gauntlet. Every vulnerable point is guarded; yet nowhere is the movement of the joint or muscle hampered in the slightest degree. The lightness of the plates indicates that the armor was designed for occasions of ceremony. The human face visor is rare. Baron de Cosson finds evidence regarding this armor (one of the most valuable of the collection) as having been a gift of the Emperor Maximilian to one of the dignitaries of his court. The left hand of the armor holds a Spanish sword made during the sixteenth century.

A remarkable harness is the jousting armor made by a German czaftsman about 1500. This is an example of the most specialized form of jousting armor. Its weight is nearly 90 pounds. The helmet, weighing 22 pounds, was bolted to the breastplate, and is of sufficient size to enable the wearer to turn his head. The armpits were protected by large rondelles, and a shield fastened at a single point served as a mark for a lance thrust. The lance of this period was sometimes over 16 feet long (about 4 inches in diameter near the hand), and weighed nearly 40 pounds. It could not, therefore, be held very well, but had to be balanced between a separate "fork," attached to the breastplate, and a long arm riveted to the backplate. Such was the weight of the armor, and the rapidity of the charge, that a lance which struck squarely would be splintered. A barrier separated the jousters, and rendered armor for the legs unnecessary. The headpiece of a horse mounted under the suit illustrated indicates that the horses were sometimes blindfolded to prevent their shying.

MILITARY PRIZE ESSAYS—A SUGGESTION.

By "A Subaltern in Central Africa."

("*The United Service Magazine*," *London*.)

WHEN discussing the art of war a great military writer has said: "Experience is of little value without reflection, and leisure has its advantages." The importance of these words and how much they mean should be especially noticeable to the present generation of officers. We live in an age of autobiographies and biographies, and not a few of these works deal with the lives of eminent soldiers both past and present. Through many of the volumes there runs a similar vein, a vein of industrious and intellectual military reading. So forcibly is this presented that the reader is almost led to believe that success is attained by pure study. The assumption is an exaggeration, but that it is the backbone of all true advancement there can be no denying.

Napoleon's maxim, and the best known of all, is to "peruse again and again the campaigns of Alexander, Hannibal, Cæsar," etc. To-day there should be no deviation from this rule.

The voice of public opinion to-day, educated by certain sections of the press and stimulated by reverses in South Africa, is inclined to credit the theory that the intellectual capacity of both officers and men is insufficient and below the average. To put forward ever so strong a plea that such is not the case is only to encounter either uncertain belief or flat contradiction. Yet there are many proofs that great numbers of officers and many even of the rank and file, now show a particularly keen interest in the past military history of their profession. There are numerous officers to-day who follow the great French captain's motto, but to whom gaining publicity for their knowledge affords no attraction. Amongst the rank and file the tendency to read military volumes is made sufficiently evident by referring to the libraries at Aldershot and other such military centers, Here, the absorbing tales told by Napier, Kinglake and other such masters are eagerly seized upon, as well as a variety of works of a less ambitious character. It is then because the material is there and gradually developing, that the following suggestion is here put forward. It is briefly as follows:

1. In order that the study of military history may be encouraged in the regular forces, a literary prize in the form of books or money is suggested. The books to be of more value in proportion. The prize to be offered to officers and men.

2. A separate prize or competition to be offered in each of the administrative districts of the new *régime*, under the control of a committee.

3. This committee or board would make a selection of —say five— military works, and each competitor would be permitted to choose one of these from which to write his essay. Each candidate when forwarding his name for competition, would notify the title of his selected work, and write an essay on that work, as set by the committee. Thus the committee of each administrative district would set five essays.

4. In order that a much higher standard may be exacted from the commissioned than from the non-commissioned ranks, there would of necessity be two boards. The officers' board should choose standard works replete with interest; while the committee supervising the rank and file should make their selections from writers less advanced, yet at the same time equally capable of exciting intelligent interest.

5. In order that there may be fair competition, captains must not compete upon even terms with subalterns, nor must warrant officers engage with raw recruits. The following division is then suggested: For the commissioned ranks, from captains upward, the same essay may be set as that for the rank of subaltern, but should be much more severely marked. There should, moreover, be no objection to a subaltern competing with his senior officers if his work is considered good enough. I mean by this that his work would in such a case be marked on the higher standard.

6. In the division for the rank and file thus:—

(*a*) In one group warrant officers and sergeants.
(*b*) In the second group corporals and other ranks.

As in the commissioned ranks, a higher standard should be marked in group (*a*); and similarly, there should be no obstacle to a candidate of group (*b*) competing with those in (*a*).

In connection with the non-commissioned ranks, a man's defaulter sheet, unless quite exceptionally bad, should not be a barrier to his competing—interest in an essay might prove the starting-point of reformation.

To-day very many works are read relating to the lives of eminent soldiers, which not only excite an absorbing interest in the tale itself, but are also especially beneficial owing to the good influences that pervade the whole. It would be easy to mention several works of military biography that have exercised a marked effect upon the careers of many British officers and men.

The plan here given is presented merely in a skeleton form, but if a fair trial falls to its lot, success should eventually attend it; and to those who now shrink from a public competition, the opportunity thus offered may present a fair field for the exercise of an ambition hitherto lying dormant. It is to be hoped that the interest created may be widespread. We possess an empire which holds sway over civilization and over barbarism, over densely and over sparsely populated countries; and through its length and breadth troops are sent to climates equable and pleasant, or variable and disagreeable. In not a few stations, more especially in the African Protectorates, an officer must support, as best he can, long struggles with solitude and loss of all civilizing influences. For months he is cut off from any intercourse with white men, and his companions are his books, which, of course, are read, and re-read, and read again. Obviously, if any reasonable incentive were offered, the study of military works would be encouraged, and the character of the contents of many book-shelves would be changed.

A

TREATISE

OF

Military Diſcipline:

In which is Laid down and Explained

The Duty of the Officer and Soldier,

Through the ſeveaal Branches of the Service.

By *HUMPHREY BLAND*, Eſq;
Lieutenant-General of His MAJESTY's Forces.

The NINTH EDITION, Reviſed, Corrected, and Altered to the preſent Practice of the Army.

In omni Prœlio non tam Multitudo & Virtus indocta, quam Ars & Exercitium ſolent præſtare Victoriam. Vegetius, Lib. I.



LONDON:
Printed for R. BALDWIN, J. RICHARDSON, T. LONGMAN, S. CROWDER and Co. and H. WOODGATE, in *Pater Noſter-Row.*
W. JOHNSTON in *Ludgate-ſtreet.*
B. LAW, in *Ave-Mary Lane*, and T. CASLON, in *Stationers Court.*
1762.



Comment and Criticism.

"A Second West Point."

Major E. E. Hardin, 7th Infantry.

I was very much interested in reading Colonel Tillman's ideas concerning the future of the Military Academy, in view of the possible increase in the number of cadets. It may well happen that the number of cadets will be larger than can be profitably instructed in one school and a division of the classes may become necessary, and I think Colonel Tillman's idea is the correct one.

It has been suggested that at the end of the second year the cadets who by inclination or special qualities show themselves fitted for the artillery, ordnance or engineers, rather than for the more military courses, the infantry and cavalry, should be retained at West Point, while the others are sent to some other place. I think those intended for the infantry and the cavalry should be kept at West Point and the others sent away and my reasons for this are: There never has been a time when any cadet was taught too much for his own future good; it makes no difference whether in after life we are called upon to use our mathematics or not, we have to use our minds, and all we learned at West Point helps us to do that and the present course would need little, if any, modification to make it entirely suitable for officers of infantry and cavalry.

It may well be that the future officers of artillery, ordnance and engineers need a more advanced course than that now given at West Point, and they can best get it at another school. On the other hand, the only just criticism that I know of that can be made on the West Point education of officers for the infantry and cavalry, is that they do not know when they graduate, anything about commanding men, and

have little sense of responsibilty, many of them having practically done four years duty as privates, and having exercised no authority or responsibilty.

In my judgment, the main and principal necessity for a line officer is to know how to handle his men and keep them in the proper spirit and how to hold them together and to himself. This knowledge is much more important to officers of the infantry and cavalry than to other officers, on account of the company and regimental organizations, and the necessity of making those organizations real live bodies capable of working together. Therefore, the cadets intended for the infantry and cavalry should be kept at West Point where the great body of cadets will be, and the first class should hold all the officers, both officers and non-commissioned officers. If there are enough in the class to furnish all the officers and non-commissioned officers, no one outside the first class should wear chevrons.

The cadets should be divided, as now, into companies, and these should be divided into platoons, sections and squads, each with its own permanent personnel and leader, and each company commander and each chief of platoon, section and squad, should be held responsible for the discipline, equipment and as far as possible for the military instruction of his immediate command, to the next higher officer over him. Any member of the first class guilty of neglect of duty or other conduct, which would reduce him to the ranks, should be turned back to the second class. The idea being that no cadet should be given a commission until he has shown himself at least competent to command a squad. With this organization there could be perfect discipline and discipline would be enforced by the first class. At present, and ever since I have known the academy, the discipline in the companies is bad.

A corporal of the third class and a sergeant of the second class, in the majority of cases, exercises no authority over privates in the classes above him and little over those of his own class; this necessarily must and does result in the feeling, on the part of the privates in classes below the corporals and sergeants, that they do not get just treatment. And the feeling is justly founded and is lasting in its future effect upon the officer. No worse thing can happen to a line officer than to acquire a habit of injustice or to fail to acquire a habit of absolute impartial justice. No amount of ability will make up for one, and an immense number of faults will be counter-balanced by the other.

No company commander on earth would think for a moment of appointing a recruit of one year's service a corporal, when he had men of three years' service who were sure of getting commissions in a year. No man can with equanimity and profit to his own military character, see himself commanded by corporals and sergeants, his juniors in years and experience, and his own inferiors in education and instruction, and no man can perform for four years at West Point, the duty of

a private and not feel that injustice has been done him. An injustice of the foulest sort has been done him and the army. If he is fit to be an officer, he is fit to be a corporal or a sergeant and injustice has been done him that he is not one. Injustice has been done him in that he has not been given the opportunity to exercise some authority and to feel some responsibility. Injustice has been done the army in that it gets an officer who has not received all the education the Military Academy is capable of giving of him. If, on the other hand, the cadet is not fit to be a corporal or sergeant, what words can describe the injustice to him, of starting him on a profession for which he is known to be unfitted, and the injustice to the army of giving them an officer known to be unfitted for the service. Such an officer is bound to disgrace the academy and should not be allowed to graduate.

The so-called hazing would disappear at once, for no first class man would for a moment, allow any member of his squad to be hazed; he would feel that he could enforce discipline in his own squad without any help from outsiders. The hazing idea at West Point, originated in well-meant and effective attempts to discipline new cadets and its abuse has been due to lack of discipline.

To take the officers intended for the infantry and cavalry away from the large body of cadets and dispose of them, the above outlined chance of improvement would be to divide the value of the education and no amount of theoretical instruction at another school would make up for it. To leave the engineers, ordnance and artillery officers to do this work would not be as valuable to them and would take part of the time they could profitably devote to study and theoretical instruction.

The large number of cadets will make it very difficult to secure enough instructors from the army, without very materially reducing its efficiency, and I believe my idea carried out, would enable the number of officers on duty with the cadets, to be largely reduced without any disadvantage to discipline or instruction.

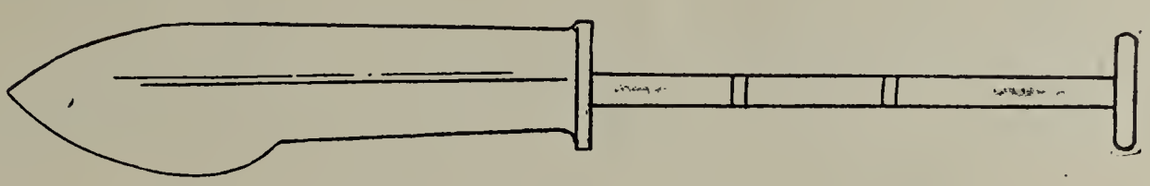
What I have said concerning discipline refers in no way whatever to the discipline of the academy, as administered by the officers on duty there. I make no criticism of the discipline of the academy now or in the past. I refer entirely to the discipline of the cadets in their companies as administered by the cadet officers and non-commissioned officers, and I state only facts known to every graduate.

MALAHI ISLAND, LAGUNA DE BAY, P. I.
SEPT. 14, 1904.

"An Intrenching Tool."

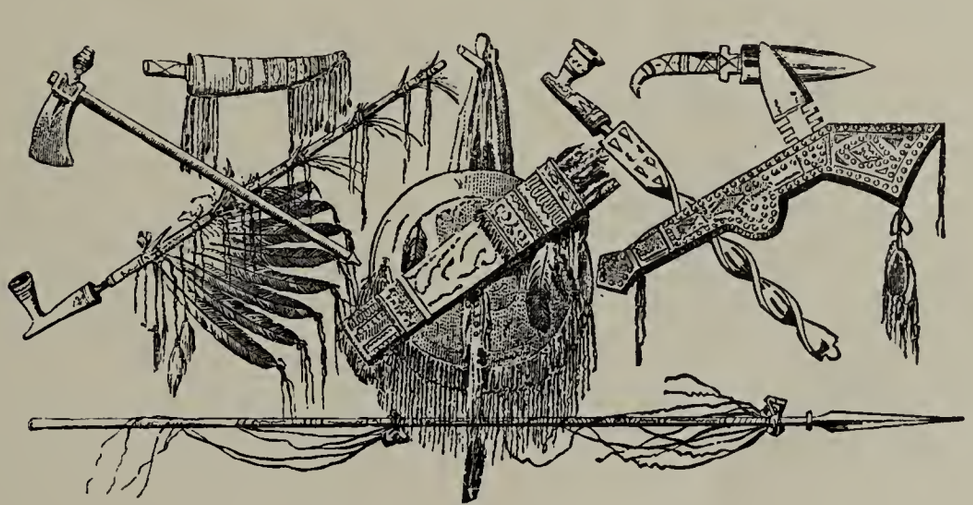
Captain W. L. D. O'Grady, late 88th N. Y. (Irish Brigade).

It has struck me that a light entrenching tool, to be carried immediately behind the fighting line, on muleback or Jap carts, could be something like an exaggerated ink-eraser, with bamboo shalt and cross-handle.



Of course, it could never supersede the more powerful picks, shovels and axes, but for prompt use at the front would serve either for digging or chopping. As a weapon, at a pinch, it would be more formidable than machete, bolo, dah or yataghan. The cross-handle gives a better thrusting power than the ordinary side gripe. Mahratta daggers and some old Italian rapiers illustrate this—with an additional length of bamboo, which might serve as a shelter tent pole, it could be used as a pike or as part of *chevaux-de-frise*, after intrenching.

Is not the new rod bayonet somewhat superfluous? At Malvern Hill, that grand old graduate of the 2d Dragoons, General Sumner, saw what the wild Irish could do "wid clubs wot they wor used to." He had been very wroth at the sight of a lot of smashed muskets, but the explanation appeased and pleased him. At Chicago, the cavalry found that carbine butts on rioters' corns were more efficacious than a threatened bayonet charge. Of Rudyard Kipling's modern "Three Musketeers," Learoyd is described by Mulvaney as "a dhirty fighter, he always uses the butt."





Reviews and Exchanges.

Recollections and Letters of General Lee.*

CAPT. ROBERT E. LEE has well performed a work of love and duty in gathering together the private letters of his father Gen. Robert E. Lee, those to his family and intimate friends. They are presented in a handsome volume of some four hundred and fifty pages, containing three portraits of the General at different periods of his life.

As the years pass, his countrymen, North as well as South, of all shades of opinion, will want to know more intimately the man who, more than any other, maintained the Southern Confederacy through all its troubled career. However opinion differed in the South as to the errors, failures or neglects of its public men, there was entire unanimity as to the capability and nobility of General Lee; a perusal of these letters will help to explain why he had and has such a hold upon the affections and confidence of a people who, by their sacrifices, sufferings and final complete failure, would be apt to criticise and condemn those in responsibility.

The letters are mostly of a personal nature and contain only incidental allusions to the war. J. W. R.

Men and Manners of the Third Republic.†

THE author of this very interesting book, or rather parts of it, for much of it was extracted from his papers and contributions to periodicals after his death, says of himself: "I do not pretend to be a historian, I am only a *causeur*, nothing more." And again: "I was brought up to look upon Republicanism in general, and upon French Republicanism in particular, as the most transparent and most ridiculous of shams."

Of course, one frankly admitting his limitations and prejudices would hardly be expected to say much that was complimentary to

*Recollections and Letters of Gen. Robert E. Lee. By his Son, Capt. R. E. Lee. New York, Doubleday, Page & Co., 1904.

†Men and Manners of the Third Republic. By Albert D. Vandam. New York, J. Pott & Co. London, Chapman Hall Ltd., 1904.

the men and manners of the Third Republic, or of any republic. Yet his criticisms doubtless have much truth for their basis, and probably add much toward a correct view of a very critical period in French history.

Peace immediately after the Fall of Sedan might have brought back Napoleon III, considering that at a much later period Bismarck threatened to restore him. Peace, without the restoration of Napoleon, meant either the restoration of the Bourbons or a republic. Apparently, the descendants of the Bourbons were not equal to the risk of loss of money or property, for no one questioned their bravery.

"The Republicans forget that they overthrew nothing; that in saying they kicked the lifeless body of the Second Empire out of the way, one credits them with too much; they simply stepped over it. The only one who displayed any courage at all was Jules Favre, and he had tested his ground before venturing on it. 'Where is the Emperor, does he communicate with his minsters, does he convey orders to them?' Favre exclaimed, twelve hours before he risked his motion for the deposition of Napoleon III and his dynasty. To all these questions there was only a monosyllabic 'No,' from Count Palikas. 'In that case,' Jules Favre went on, this time addressing the Chamber at large, 'there is no need for me to enter into long developments to make the Chamber understand that the *de facto* government has ceased to exist, and that unless there be wilful blindness and obstinacy, which would cease to be patriotic, the Chamber can only appeal to itself and to the nation for the means of defence of both.'"

Gambetta proclaimed himself the master of France, and France submitted in her dire extremity to the dictatorship. The author, regarding this says: "I have already said Gambetta had not the pluck of a mouse and I shall probably say so again. It is well to insist upon this in view of the English tendency, in many quarters, to accept his fame at the valuation of his successors who have dared to raise a statue to him opposite the parade ground, where the first Napoleon reviewed his sublime, though not unconquerable legions. There is a difference between these two usurpers, in spite of the fact of both having sent thousands of Frenchmen to their doom. There is a difference between the hundred and odd days after the ascent of the balloon from the little square of St. Pierre at Montmartre. There is a difference between the flight of Napoleon in June, 1815, and the flitting of Gambetta from Bordeaux in February, 1871. It is like the fall of a race horse and the fall of a cart horse. Yet this low-bred adventurer, who showed the white feather at the sound of a few pistol shots at Orleans, where he had gone to correct the tactics of Aurelle de Paladines, bullied and browbeat the generals whose shoes he was not fit to clean, and as neither General Bonaparte nor Napoleon I would have thought of doing." The future student of the real and impartial history of the war, which has not yet been written, will never cease to wonder at the submissiveness of all those generals, and at their obedience to the orders of those who had neither regular authority, nor competence to condone their usurpation." All the scandals which have made the Third Republic a by-word among civilization, had their origin in that four months' dictatorship."

The author then proceeds to detail the intriguing and the scandals during the administrations of Thiers, Jules Grévy, and their successors. There must be much inherently good in the French people

to have developed from all this witch's cauldron a republic so capable, and apparently so stable, as that now existing among them.

A very interesting chapter is devoted to the "Spy Mania and the Revanche Idea." The author says: "The story of this institution, there is no other word for it, would fill a big book. To go no further than Richelieu, we find a perfect network of espionage, of which the great Cardinal held the strings. Not only was it cast over the land, but it had its ramicfiations beyond the frontiers. Mazarin was probably less generous with his rewards to his tools than his predecessors, but he was equally well served by them. La Reynio, Sartines, Berryer, and Fouché, all distinguished themselves as head of the system, and under each it was more or less perfected. In short, there is not a period of French history, from the advent to power of Armand Leander Pleasis to the hour in which these lives are written, in which the spy, no matter under what form or denomination, did not work his evil ways and did not contribute to the lowering of the political as well as moral standard of the government."

"For years not a single foreign spy has been caught in France; while on the other hand, two French ones were caught in Germany, besides an Alsatian women in Metz. Wilhelm II, commuted the sentence of the former, if I remember rightly, at Carnot's death. Nevertheless, France continues to suffer from the spy mania, and we have seen what it has led to. When a nation has been inflicted with acute spy mania for a number of years, she resorts instinctively to the supposed remedy of counter espionage. Guizot, whose writings were even more well weighed than his verbal utterances, has plainly told us that the road between the spy and the agent procurator is short and easy of descent. It is the most lurid of all the side-lights of the *revanche* idea; so lurid, in fact, as to defy extinguishing, even at the risk of morally swamping military France."

The very recent resignation of General André, the Minister of War, under charges of encouraging spying on military men, draws attention just now to the universality of spying in the French Republic.

J. W. R.

Letters from an American Farmer.*

THE author of this attractive American classic, which has passed through as many editions as Mrs. Grant's "Memoir of an American Lady," was a native of Normandy. He completed his education in England and came to Canada, where he served in the French Army for two years. After the fall of Quebec and the conquest of Canada, Crèvecour removed to Pennsylvania, and in 1764 he became a naturalized citizen of New York. Five years later, after marrying an American wife in Yonkers, he settled on an Ulster County farm, where he lived the peaceful life of many idyllic years, gathering the data for the well-printed octavo volume under notice. In 1779 our author attempted to return to Normandy, but the sudden appearance of a French fleet in New York water, caused Crèvecour to be suspected by the British of being a spy, and he was imprisoned for several months. He was then permitted to sail, and on his arrival in London, succeeded in selling his "Letters from an American Farmer," for one hundred and fifty dollars. They were published in 1782, the

Letters from an American Farmer, by J. H. St. John Crevecour, Detroit.—Fox, Duffield &Co., 1904.

year after their author reached his native land. Returning to his adopted country in 1783, Crèvecour was appointed French consul in New York, becoming well known to Washington, and an intimate friend of Franklin, accompanying him on various journeys, one of which is recorded in the "Voyage Dans La Haute Pennsylvanie." In 1790 he returned to France, where he died in 1813.

Washington was right when he declared the poet-naturalist's volume would "afford a great deal of profitable and amusive information;" also exhibiting his characteristic prudence by adding that perhaps the picture "though founded on fact, is in some instances embellished with rather too flattering circumstances." A decade later, Charles Lamb wrote to a friend: "Tell Hazlitt not to forget the 'American Farmer.'" He did not, but described it as giving a good idea of "how American scenery and manners may be treated with a lively, poetic interest. The author gives not only the objects, but the feelings of a new country."

We cordially commend this interesting work, with its singularly engaging style, and have no criticism to make of it beyond the expression of our regret, that so valuable a volume should lack an index.

JAS. GRANT WILSON.

With General Grant on the Nile.*

IN January, 1878, General Grant arrived at Alexandria in the United States steamer *Vandalia*. In Egypt, as in almost all countries visited during his memorable tour around the world, he was accorded a royal reception. The Khedive among other courtesies, furnished the General and his party a fine steamer, in which to make the ascent of the Nile. That Grant might have the full pleasure and greatest benefit of the voyage, the Khedive sent one of the conservators of the museum at Cairo to accompany him to translate the hieroglyphics, and give all necessary explanations. Consul Farman, the author of the well printed volume, was also aboard. The book is not written for the learned Egyptologist, but for those who have neither made a special study of the subject, nor had an opportunity of seeing the works of that ancient land, which for centuries have been the admiration and wonder of the world.

Now and then Mr. Farman introduces interesting remarks made by General Grant on subjects not connected with Egypt, as when he said to the consul: "At the beginning of our war in 1861, the two persons that were looked up to by the whole army as the coming men from whom much might be expected, were Generals Charles P. Stone and McClellan; that they undoubtedly had the best military education, and were the two best informed men in that department in the United States. General Stone had been the most unfortunate man he had ever known, but that his misfortunes were no fault of his own. He clearly intimated that in the affair at Ball's Bluff, a large part of the responsibility rested upon McClellan and that Stone was too loyal to his superior officer to publicly place the blame where it belonged, relying upon General McClellan, an old companion in arms, to right the wrong. This he never did."

The value of this interesting volume is greatly enhanced by sixty-five excellent full page illustrations, and a carefully prepared index.

JAS. GRANT WILSON.

**Along the Nile with General Grant.* By L. E. Farman, L.L.D.—N. Y. The Grafton Press, 1904.

The Wellington Wind Chart for Rifle Shooting.*

BRITISH riflemen having no wind gauge on their sights must find this handy little chart most convenient, especially those who are so unfortunate as to have to shoot at five or six hundred yards distance for the first time without a coach. The information it contains is surely in most practical form, as a glance at the chart is all that is necessary. More than this, it can lay little claim to originality—perhaps fortunately. The determination of the strength of a breeze by a pennant is familiar, and the other diagram, where the force of the wind is resolved on the face of a clock is an old trick as well. The chart would be more valuable for target practice were the corrections for wind expressed in fractions or divisions of the targets' width, instead of in feet and inches. To adapt it to a wind-gauge sight, the corrections could easily be converted into divisions of the leaf. In any event, though a "fish tail" breeze might well continue to be baffling in spite of the chart, its cost, three pence, is little more than the price of a couple of sighting shots and these might easily be saved in the course of an afternoon, even by the more experienced shots, were one of these wind charts available.

T. H. L.

General Sir Henry Drury Harness, K. C. B., Royal Engineers.†

THIS book is a memoir collected and arranged by the late General Collinson, R. E., and edited by General Webber, C. B., R. E., London, 1903. It contains a series of papers written by various officers who came into intimate contact with him during his eventful life.

The memoir opens with an introduction giving a brief summary of General Harness's life. He was born in 1804 and died at Oxford, February 10, 1883. He passed through the Royal Military Academy at Woolwich, leaving in 1824, and was delayed in obtaining a commission, as there were no vacancies at that time. He went to Mexico as superintendent of a silver mine and returned to England, obtaining his commission in 1827 as Second Lieutenant of the Royal Engineers. He was successively promoted to the various grades, becoming major-general in 1868 and colonel commandant in 1877, and in the same year he retired with the honorary rank of general.

The various distinguished services of this officer are set forth in the succeeding chapters of the book in the form of biography and correspondence, briefly described as follows:

1. Mexico, 1825; Royal Military Academy, 1834 to 1844 and 1852, by General Collinson.

2. Report of the Irish Railway Commission, arbitrator between the Post office and Railway Company, and work as Secretary to the Railway Commission of 1846, by General Hutchinson.

3. The Reform of the Royal Mint, 1850 to 1854, by Gen. J. H. White.

4. Board of Public Works, Ireland, 1854 and 1855, by Gen. Sir R. H. Sankey.

5. The War Office, 1855 and 1856, and Malta, 1856 and 1857, by General Collinson.

**The Wellington Wind Chart for Rifle Shooting.* London. Gale and Polden, 1903.

†*Gen. Sir Henry Drury Harness, K. C. B., Colonel Commandant, R. E.* Edited by Gen. Webber, C. B., R. E. London, 1903.

6. The Suppression of the Indian Mutiny, 1857 to 1860, by General Webber.

7. Education and Organization of the Engineer Service, 1860 to 1862, by General Collinson.

8. Royal Engineers' School, Chatham, 1860 to 1865, by General Collinson.

9. Retirement, 1865 to 1883, by General Collinson.

The book is very readable and instructive and portrays the versatile talents of General Harness. He possessed executive ability and a business discrimination to a remarkable degree. This, added to his capabilities and training as a soldier and engineer, made him at once an important figure in the economic questions of the time far above his actual duties and position.

As General Collinson says in his preface, he possessed a powerful mind and a large heart, and underlying these was a deep religious feeling. The circumstances of his career and his inclination turned him to mathematical and physical problems, but he could readily apply his mind to any of the great questions of the day. His papers were valuable not only for the light they threw on the particular questions dealt with, but for the fine general principles they contained. His face was a tower of strength, and you could feel with him what true loyalty meant. These qualities made him what he himself wished to be—a true soldier. He had also another quality, and that was his deep-seated faith in the government of the world by a divine and beneficent Creator, which influenced his dealings with all men.

During his active life he devoted his whole energies to the uplifting of the army, and especially of the engineer service. While at Woolwich he assisted Captain Denison in starting "The Professional Papers of the Royal Engineers." In 1840 he was instructor at the Royal Engineer School at Chatham; in 1855 he was appointed Deputy Inspector General of Fortifications, and in 1860 Director of the Royal Engineer School at Chatham.

After his retirement he lived for nearly seventeen years at Warting, near Basingstoke, but he was several times called to active service on important missions, viz.: in 1866 on the cattle plague; 1868, Royal Commission on Water Supply of London; 1869, Council of Military Education, and 1876, President of a joint Board of Artillery and Engineer Officers upon Siege Operations. He also devoted considerable time to the theological discussions of the church at that time. His intimate friend to the last was Reverend G. R. Gleig, Chaplain General of the army. His career reflected new glory on the Corps of Royal Engineers, of which he was an honored member.

E. H. S.

General Butterfield.*

THIS special memorial work from *The Grafton Press*, New York, 1904, beautiful in execution, liberal in detail, and breathing the spirit of loyal devotion, is a most interesting addition to the literature of the war period of 1861–5.

Butterfield was a typical product of the civilian life of New York. He had partly educated himself solely from love of the themes in the ordinary duties of a line officer, prior to 1861, at which time he was colonel of the Twelfth Regiment, N. G., N. Y. A graduate of Union College, and the son of a well-to-do and successful business man, he had had special opportunities, which he had not neglected to utilize, and was at this time in his thirtieth year.

Volunteering the services of his regiment at once, the Twelfth sailed in the *Baltic* on April 21, 1861, for Fortress Monroe, within two days after the famous departure of the Seventh Regiment to Washington, promptly filling its ranks with recruits who mostly went in citizens' dress so great was its popularity. The regiment was quickly made efficient, and in June went to West Virginia, Colonel Butterfield being assigned to command the brigade in which was the Twelth; but the three months of their enrollment expired without any sanguinary experience, although their service was hard and varied.

The directors of the American Express Company, in August, 1861, on the return of the colonel to New York, passed flattering resolutions, and assured him his salary during the war while serving the country.

He had been promoted to a lieutenant-colonelcy, U. S. A. in May, and now he was promoted to brigadier-general, U. S. V. in September, 1861. He took the field under General Fitz John Porter, and went through the Peninsula and second Manassas campaigns.

His energy and fighting qualities were conspicuous in the Peninsula campaign at Hanover Court House, and his popularity was recognized by the gift from the field officers of his brigade of a costly pair of spurs. The address was made by brave Colonel Vincent, who fell at Gettysburg.

The Medal of Honor was awarded to him in September, 1862, for most skilfully resisting the enemy at Gaines' Mills, where, seizing the colors of the Eighty-third Pennsylvania Regiment of his brigade, he lead them into the fight "at a critical moment."

Gen. F. J. Porter said of him: "General Butterfield had no superior as a soldier among the young volunteer commanders who came under my personal notice."

He was made major-general in November, 1862, and given command of the Fifth Corps, but was superseded by Gen. George G. Meade after Fredericksburg.

A letter to the Hon. S. P. Chase, Secretary of Treasury, dated November, 1862, is interesting from its suggestions for the substitution of pack animals in place of a large number of the wagons in a train to facilitate movements and to reduce expense, and shows the thoughtful activity and organizing talent which he had, and during that year he had "taps" changed to suit his ear, and as appears from this record, the now familiar bugle call was revised in that way.

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*A Biographical Memorial of General Daniel Butterfield, including many Addresses and Military Writings," edited by Julia Lorrilard Butterfield.—N. Y., The Grafton Press, 1904.

In January, 1863, General Butterfield became Chief of Staff to General Hooker.

At this time he originated the distinctive corps badges. He says: "The badges or marks * * * were chosen by me for no reason other than to have some pleasing form or shape easily and quickly distinguishable and capable of aiding in the *esprit de corps*," etc.

His service as Chief of Staff continued after General Meade's appointment as Commander of the Army of the Potomac, and through the Battle of Gettysburg, where he was wounded. He served thereafter under General Hooker at Washington, and in the Army of the Cumberland.

In 1863 was published a manual on "Camp and Outpost Duty," which the general wrote, and which was most highly commended by the military authorities, and widely studied under their direction.

He served during the fall of 1863 in the campaign about Chattanooga, under Hooker, and sought to be assigned to a command. His recommendations and endorsements were most complimentary.

In April, 1864, he was given command of a division of the Twentieth Army Corps, Hooker's, in the Army of the Cumberland. In June he received leave of absence for thirty days on surgeon's certificate, and came to his home on the Hudson.

He had no further service at the front, but remained in the army until after his father's death in 1869; his life during the next thirty-two years was full of business and social activities.

The volume contains a number of addresses given in the course of a happy life, accentuated by the association of his wife, Julia L. James, the widow of his neighbor at Cold Spring, whom he married in London in 1886.

The exceptional ability of General Butterfield in matters relating to transportation and organization must have been his in part by inheritance, for his father was one of the founders of several express companies, from which have grown Adams and the American Express Company. He was an excellent speaker, and his letter to Hooker, dated June, 1864, telling him not to talk too much, is a model of terse English composition; his oration on Honor and Duty, delivered at Union College, in 1892, plainly reveals the high ideals and energetic stamp of the man. He quotes therein from Horace "Who trusts himself shall sway the multitude," and the impression the book leaves is that he was the thought.

The service Gen. James Grant Wilson has rendered to Mrs. Butterfield in compiling the book is gracefully acknowledged by her, and the numerous portraits of the general, the illustrations of the battle monument to his Fifth Corps at Fredericksburg, which he donated, that of the Twelfth Regiment at Gettysburg, the pictures of battle scenes and other objects, greatly enliven this memorial of a loyal American citizen and soldier. C. E. L.

Journal of the Military Service Institution 1878 — 1905

Governor's Island N. Y. H.

THE JOURNAL

MARCH-APRIL, 1905

SOME of the papers approved for early publication in JOURNAL for the year 1905.

I. "EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN; WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY"—The Prize Essay for 1904 (Gold Medal).

II. "LINES OF INFORMATION: THEIR DEVELOPMENT AND THEIR VALUE TO STRATEGIC TACTICS."—Read before a General Meeting, Military Service Institution, January 11, 1905. by Brigadier General Adolphus W. Greely, Chief Signal Officer, U. S. A.

III. "THE SURPRISE OF THE TABOR BRIDGE AT VIENNA BY PRINCE MURAT AND MARSHAL LANNES, NOV. 13, 1805."—From the Original Documents in the Ministere de la Guerre in Paris and the Kriegs-Archivs in Vienna, by Frederic Louis Huidekoper.

IV. "THE URGENT NEEDS OF OUR COAST DEFENSE"—by Captain Thomas E. Merrill, Artillery Corps.

V. "FIELD ARTILLERY"—An Historical Resume, by Brigadier General Joseph P. Farley, U. S. A.

VI. "A STATEMENT OF THE PRESENT NEEDS OF THE COAST ARTILLERY"—by Lieut. George M. Brooke, Artillery Corps.

VII. "THE ARMY CHAPLAIN; HIS WORK AND WORTH"—by Chaplain C. C. Bateman, U. S. A.

VIII. "LA FORCE PUBLIQUE DE L'ETAT INDEPENDANT DE CONGO"—par le Captain Harry Madeline. (Belgian Army.)

IX. "THE CALIBER OF THE REVOLVER" by Major Robert L. Bullard, 28th Infantry.

X. "PHYSICAL PREPAREDNESS AND THE ORGANIZED MILITIA"—By Captain Nathan S. Jarvis, U. S. A.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

MEMORANDUM.

ANNUAL GENERAL MEETING.

THE Annual General Meeting of the Military Service Institution will be held at Governor's Island, N. Y. H., on Wednesday, January 11, 1905, at 2.30 P.M., for the Election of a President and six members of the Executive Council. Immediately upon the close of the business meeting, Brigadier-General ADOLPHUS W. GREELY, Chief Signal Officer of the Army, will read a paper entitled "*Lines of Information: Their Development and their Value to Strategic Tactics.*"

THE SEAMAN PRIZE.

AT a Stated Meeting of the Executive Council, Dec. 14, 1904, the *Seaman Prize of 1904* (One Hundred Dollars in gold) was awarded to Captain PETER E. TRAUB, 13th U. S. Cavalry, for the best paper on "Military Hygiene: How Best to Enforce its Study in Our Military and Naval Schools, and Promote its Intelligent Practice in our Army."

OUR NEW BADGE.

Referring to the announcement in the JOURNAL MILITARY SERVICE INSTITUTION for September, 1904, of the new (bow-knot) badge, hereafter to be worn by Members and Associate Members, and in order to make the decoration unique, it has been determined to combine with the bow-knot the monogram M. S. I. in gold, detachable in case the ribbon bow-knot is renewed.

Although this change involves additional expense, no increase will be made in the rate already fixed of 25 cents per badge (including one gold monogram) for all entitled to wear it, provided application is received at this office before January 1, 1905. After that date the charge for the complete badge will be 75 cents. The ribbon bow-knots (without monogram) will be furnished for 25 cents apiece.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N.Y.H.,
Jan 1, 1905.

The Military Service Institution.

HONORARY MEMBERS.

THE PRESIDENT OF THE UNITED STATES.

Ex-President GROVER CLEVELAND, LL.D.

The SECRETARY OF WAR. The LIEUTENANT-GENERAL.

OFFICERS AND COUNCIL.

President.

Major-General THOMAS H. RUGER, U. S. Army.

Resident Vice-Presidents.

Major-Gen. JAMES F. WADE, U. S. A. Brig.-Gen. JOHN W. BARRIGER, U. S. A.

Secretary.

Brig.-Gen. T. F. RODENBOUGH, U. S. A.

Treasurer.

Major E. M. WEAVER, ARTILLERY CORPS.

Asst. Secretary.

(Vacancy.)

Vice-Treasurer.

Lieut. W. H. JOHNSON, 8th Infantry.

Executive Council.

Term ending 1909.

Major G. S. BINGHAM, Quartermaster's Dept.
Colonel J. E. GREER, Ordnance Dept.
Colonel W. R. LIVERMORE, Corps of Engineers.
Major C. E. LYDECKER, N. G. N. Y.
Major A. MURRAY, Artillery Corps.
Col. C. C. SNIFFIN, Pay Dept.

Term ending 1907.

Bvt. Brig.-Gen. D. APPLETON, N. G. N. Y.
Colonel E. E. BRITTON, N. G. N. Y.
Colonel H. O. S. HEISTAND, Asst. Adjt. Gen.
(Vacancy.)
Lieut. Colonel H. S. TURRILL, Medical Dept.
Major E. M. WEAVER, Artillery Corps.

Term ending 1905.

Major D. L. BRAINARD, Subsistence Dept.
Captain F. W. COE, Artillery Corps.
Lieut. Colonel E. E. DRAVO, Subsistence Dept.
Brig. Gen. A. L. MILLS, United States Army.
Colonel F. A. SMITH, Eighth Infantry.
Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Finance Committee.

Gen. BARRIGER.
Lieut. Col. DRAVO.

Library Committee.

(Vacancy.)

Publication Committee.

Gen. BARRIGER, Gen. RODENBOUGH, Col. GREER and Col. SMITH.

MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.

Gold Medal—1905.

First Prize—Gold Medal, $100 and Life Membership.

Second Prize—Silver Medal, Honorable Mention and $50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with $100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and $50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January* 1, 1906. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize;* and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed ten thousand words, or twenty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1905, is

THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT: THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED.

III.—The Board of Award for 1905 will be announced in a later issue of this Journal.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.



The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, the subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for the year 1905 is:

HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED?

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be transmitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1905. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The Board of Award for 1905 will be announced in a later issue of this Journal.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: $50, and Certificate of Award; and $25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, excepting that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March 1 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.



Fry (General) Prize.



The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

Buford (Cavalry) Prize.



The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

Hunt (Artillery) Prize.



The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.



The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

Fifty Dollars

"for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1905 will be announced in a later issue of this Journal.

T. F. RODENBOUGH,
Secretary M. S. I.

GOVERNOR'S ISLAND, N. Y.,
January 1, 1905.

Publisher's Department.

HORLICK'S MALTED MILK.

For Infants and Invalids, the Aged and Travelers.
A Delicious Food-Drink for Everybody, of all Ages.

An interesting report has lately been made by an eye-witness of the method of making this delicious food, which has proved so valuable in the hands of the medical profession all over the world as a nutriment for infants as well as an excellent dietetic adjunct to the treatment of typhoid and malarial fevers, etc. The works are located in the richest dairy region of the Northwest, surrounded by fields of growing grain and luxuriant prairies, the water supply being obtained from the celebrated Niagara limestone formation which furnishes so many medicinal springs. The air is always pure and clean, and free from the odors, dirt, and germs of large cities.

Special pains are taken to insure as absolute cleanliness as possible of the cows, barns, milking utensils, and the milkers themselves. The barns are well-lighted and ventilated, provided with cement or stone floors, the walls dazzlingly white, the floors well drained and always clean. Expert veterinary surgeons examine the cows and every detail of the feeding at frequent intervals. Every precaution is carefully devised to prevent the entrance or growth of bacteria.

The barley to be malted is selected with great care, and in the malt houses of the company the most scientific methods are adopted to insure proper growth of the barley and the development of the valuable ferments, diastase and peptase. The wheat used is the best hard wheat of the extreme Northwest, carefully inspected and so prepared that both from the wheat and barley all of the valuable phosphates in their original organic combinations are preserved. The importance of this element in the composition of food is recognized by all.

Finally, in costly apparatus of the latest design, kept scrupulously clean, the large copper receptacles glistening with the sheen of the burnished copper, the extracts of the cereals are prepared, all the extraneous matter separated, and the solution combined with the proper amount of milk and evaporated to dryness. This is done at a very low temperature, so that the milk is not changed in its digestibility, but is preserved in all its pristine freshness.

Still further, by the action of the ferments originally contained in the malt, all of the starch of the barley and wheat is digested, and the proteids contained in the ingredients are rendered far more assimilable than when present in the raw state. Finally, the powdered product is packed in hermetically sealed glass jars, so that no change can take place in the product until it is made to serve as a delicious food for the infant or the invalid.

In another department some of the powdered malted milk is compressed into the celebrated tablets supplied by this firm, containing the same product (with chocolate to thoroughly flavor them), furnishing a confection for growing children far superior to candy, and used very largely by busy professional men as a quick lunch when meal time is interfered with by press of work.

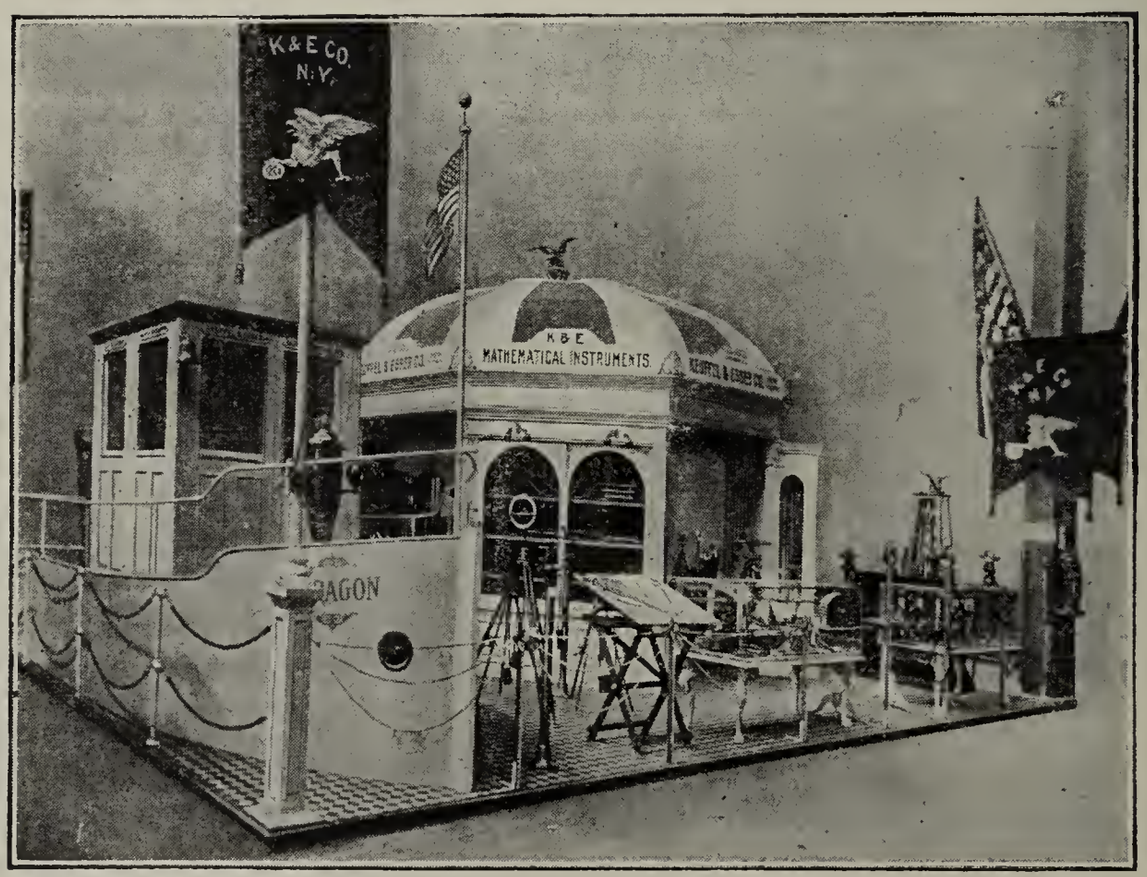
During the many years of their existence, Horlick's Food Company has received an enormous number of photographs of children raised entirely upon their product from birth until the child was able to take the ordinary table diet, which have come from all parts of the world accompanied with grateful letters from parents and physicians.

At the same time, their records contain many testimonials from physicians who have used Horlick's Malted Milk in typhoid and malarial fevers, bronchial and tuberculous troubles, and whenever an easily assimilated and nutritious food is indicated. Especially noticeable is the large use that has been made of Horlick's Malted Milk in alcoholism, and its increasing use as a topical application in cases of indolent ulcer.

Horlick's Malted Milk is especially valuable in tropical and sub-tropical climates, as offering a pure milk food to the medical profession, so prepared as to be acceptable to the immature stomach of the infant, as well as to the irritated intestinal tract of the fever patient.

* * *

Many of our readers will have noticed the handsome exhibit of the **KEUFFEL & ESSER CO.** New York, in the Palace of Liberal Arts, at the Louisiana Purchase Exposition, which is here illustrated. **KEUFFEL & ESSER CO.** have been awarded the only Grand Prize, Group 19,



Liberal Arts, Instruments of Precision, Philosophical Apparatus, etc., and a Gold Medal, Group 115, Mines and Metallurgy, Instruments and Equipment for Underground Surveying. They furnish instruments and materials to nearly all branches of the army and navy, and their products are probably known to every user of drawing materials and surveying instruments throughout the country, who will agree with the verdict of the International Jury of Awards.

GRAND PRIZE AND GOLD MEDAL AWARDED THE PRUDENTIAL.

The Prudential Insurance Company of America has received the Grand Prize and a Gold Medal at the St. Louis Exposition for its exhibit illustrating the company's business methods and vast and successful results.

The Prudential and its policyholders are being congratulated on the fact that this award makes The Prudential the most highly honored insurance institution in the world. In the history of life insurance no other company has ever received a corresponding award, although numerous exhibits have been made by insurance companies in the United States and Europe.

The award was granted by a jury of qualified experts, and places the seal of highest approval on what by the common consent of visitors to the Exposition was one of the most interesting and instructive exhibits at the St. Louis Fair.

Such a comprehensive exhibit was possible to The Prudential only by reason of the perfect control which the management of the company exercises over its great organization and the vast details of its business.

* * *

THE GRAND PRIZE ON COCOA AND CHOCOLATE.

Walter Baker & Co., Ltd., the oldest and largest manufacturers of cocoa and chocolate preparations, were awarded the grand prize on all their products exhibited at the World's Fair, St. Louis. They received, in addition, a Gold Medal for the installation of their exhibit. This famous company was established in 1780, and has received forty-three awards from the great international and local expositions held during the last fifty years in this country and in Europe.

* * *

A NEW RE AND DE-CAPPER.

The Ideal Manufacturing Company, New Haven, Conn., are now ready to put on the market a new implement for expelling the old primers from shells that have been fired and reseating new ones. The operation is in a straight line as may be seen by referring to the illustration. The implement may be fastened permanently to a bench or table, in which case it should be located at the right hand, front corner, so that the handle "A" will hang down as shown in the illustration; or it may be fastened to a piece of board attached to a work bench, said piece of board projecting about four inches beyond the front edge of the bench. The forward portion of the block should be cut out between the extractor holder "J" and the head "K'', so that the old expelled primers may drop into a receptacle underneath. The cut shows operation of expelling the old primer "E" just completed; the lever "A" is then down and expelling pin is seen as having passed through the fire hole in the pocket of the shell "G," which is shown as half cut away. The cap extractor "F" is pivoted to the extractor holder "J," the joint pin showing near that letter. To complete the operation of recapping, knock off the old primer "E," drop a new one in slot "D," and raise the lever "A" which is attached to two parallel links (only one of which is shown as "B"). The other ends of these links "B" are pivoted to the shell holder "I" in which is slot "H," into which the head of the shell "G" drops, the body of the shell near the head resting in a semicircular seat. This seat, together with the decapper "F," holds the shell in perfect alignment with punch "C," which

passes through holes on each side of the slot "D," forcing a new primer in the pocket of the shell perfectly true, without tipping. When the lever "A" is raised the links "B" draw the shell holder "I" together with the shell "G," up to the punch "C." When the primer is seated the cap extractor "F" is raised and the primed shell is removed, another shell is placed and the operations repeated.

The implement is equally good as a hand tool. The lever "A" folds over so that the tool may be carried in the pocket. It weighs but eight ounces. It is strong and powerful. It seats the primers easily and positively to the bottom of the pocket, which prevents misfire. It ejects the old primer and



IDEAL No2 RE & DE-CAPPER.

seats a new one without removing the shell, which is handled but once to perform the two operations, thus enabling the operator to do nearly twice as much work in a given time, which is valuable where quantities are required, as in Military Armories. The use of this implement in armories where loading presses are used, will enable two operators to work at one and the same time, as the loading press may then be kept at the heavier work all of the time. The following sizes are now ready: 25/35, 25/36, 30/30, 30/40 Krag, 30/45 Springfield, (headless), 32/40, 38/55.

* * *

A FAMOUS SEED HOUSE.

An instance of commercial development and growth to proportions unusual is cited in the career of the well-known seed firm, D. M. Ferry & Co., of Detroit, Mich. Since its establishment, half a century ago, the company, following out principles of strict business integrity and building upon unquestionable merit, has steadily grown until the name of Ferry's Seeds is now a household word with every planter in the land.

Ferry's Seeds are famous for their purity, freshness and reliability. The greatest of care is exercised in their growing and selection, and only seeds of the highest possible standard are placed upon the market. Every package has behind it the reputation of a house whose standards are the highest in the trade. A fresh stock, just received from the growers, is carried by dealers everywhere.

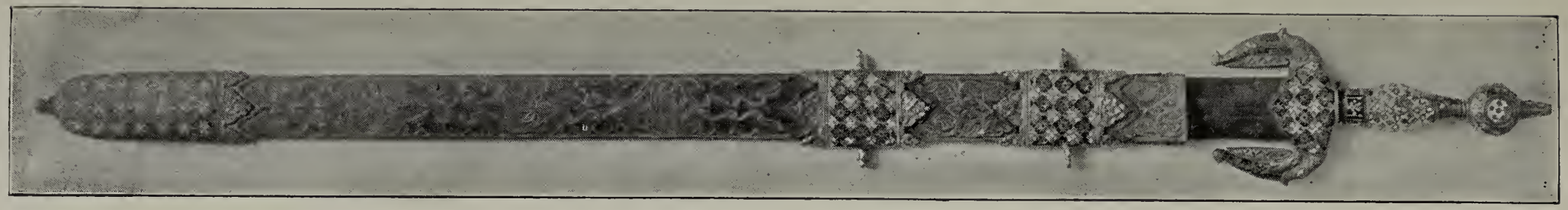
All farmers and gardeners ought to have a copy of the 1905 Seed Annual of the Ferry Company. It contains information and suggestions that are invaluable. The Annual will be mailed free to anyone addressing D. M. Ferry & Co., Detroit, Mich.





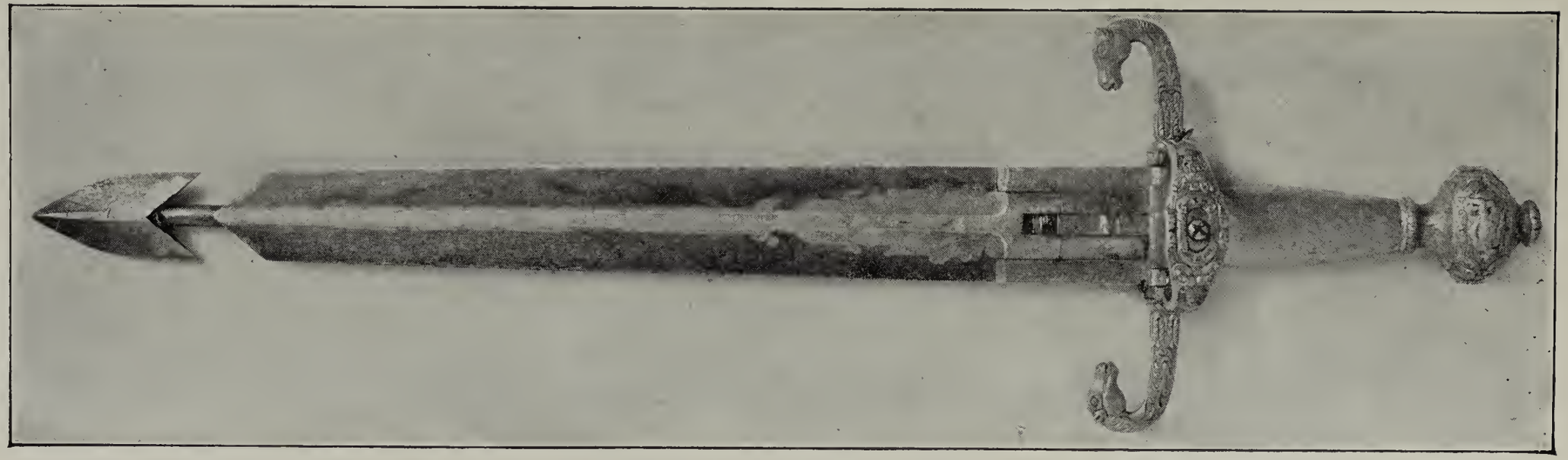
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THE HELMET OF HENRI II, SEEN FROM BOTH SIDES. ITS RICH ORNAMENTATION PICTURES THE HEROIC DEEDS OF HERCULES.



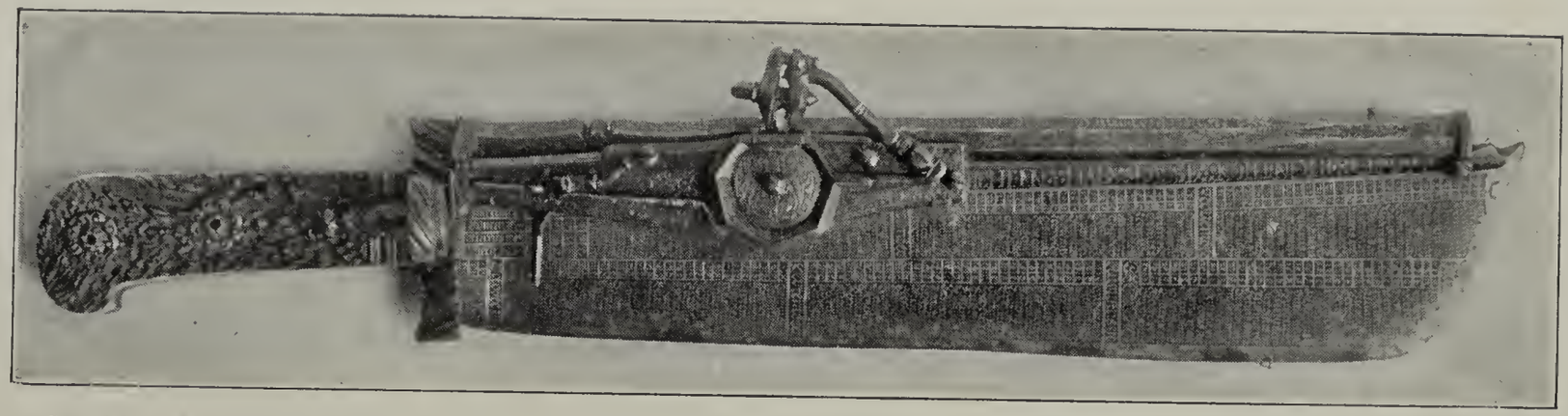
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THE SWORD OF ABEN ACHMET.



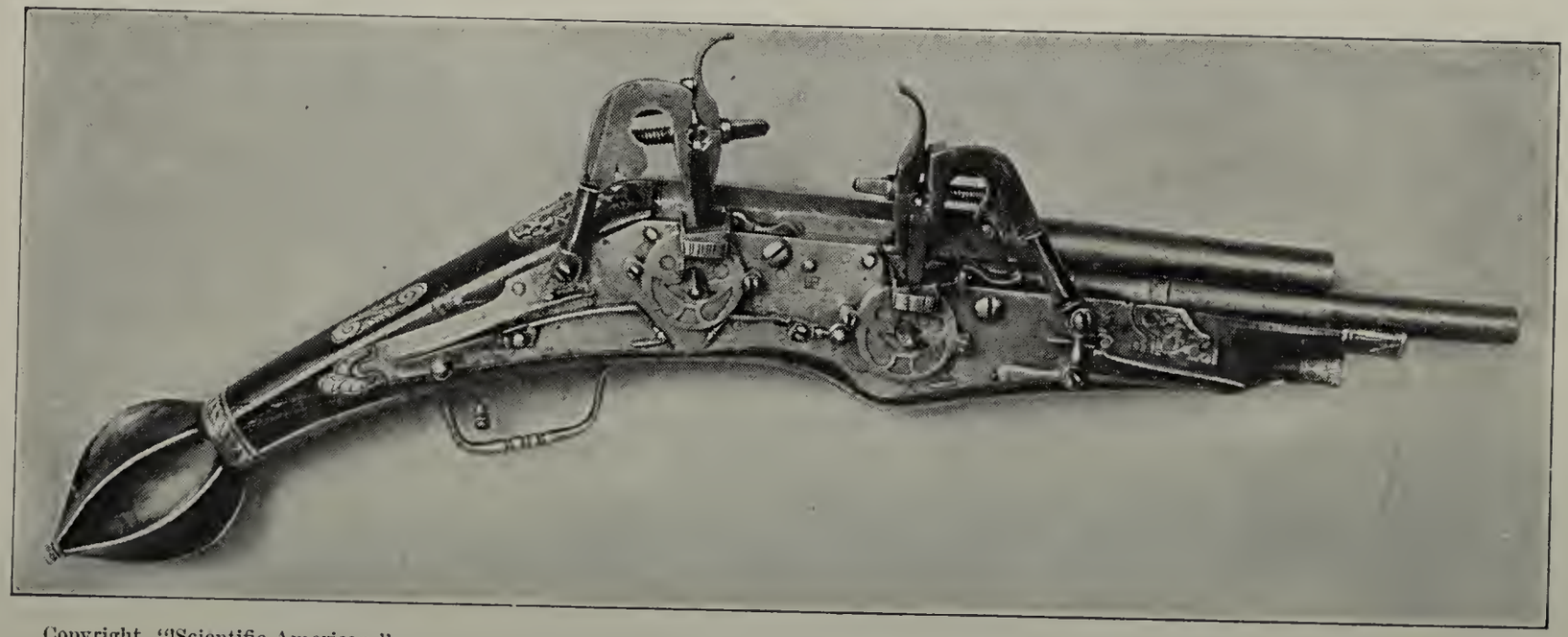
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A CURIOUS DAGGER AND PISTOL COMBINED.



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CALENDAR HUNTING KNIFE WITH PISTOL, WHICH MARKS THE TRANSITION STAGE TO FIREARMS.



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AN EARLY DOUBLE-BARRELED FIREARM IN THE DE DINO COLLECTION.

JOURNAL
OF
THE MILITARY SERVICE INSTITUTION
OF THE
UNITED STATES.

"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

Vol. XXXVI. MARCH-APRIL, 1905. No. CXXXIV.

Gold Medal Prize Essay.

THE EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN: WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY.

BY CAPTAIN CHARLES D. RHODES, GENERAL STAFF,
UNITED STATES ARMY.

SO much of moment has happened to our army as well as to our country since the beginning of the war with Spain, that even a bare recital of military events would form a history in itself, and far transcend the contemplated limits of this essay.

Had the American people been told a decade ago that our little army would invade and conquer the territory of a European power; would participate with honor in an international expedition against the capital of China; would land an army in the Orient, and subdue a treacherous Malay race nearly 8000 miles from its base, such statements would have been received with derision and incredulity, and public opinion would have stamped the speaker as a madman.

Shall we now forget those serious debates in the halls of Congress, in which it was solemnly affirmed as improbable that our country would ever again engage in war; that by reason of our isolation, as well as by virtue of the general goodwill of the nations of the earth, we were forever safe from inter-

ference by bellicose powers; and finally, that if misunderstandings should arise, arbitration was the factor of the future which would make war impossible?

Attempts were not wanting to reduce our already diminutive army to numbers unbecoming a third-rate power. Congress had so feebly responded to the Endicott Board on coast-defense, that in 1898, thirteen years after adoption of the recommendations of the Board, but 151 pieces of ordnance were in position, of the 2362 contemplated. The militia law had been allowed to remain in the same defective condition, as it was in the time of Washington and Jefferson. No national reserves had ever been provided for by law, and the staff departments of the army had been repeatedly discouraged from accumulating a proper reserve of war supplies.

Although such was the enervation with which thirty years of peace had afflicted the business methods of the War Department, and the Secretary of War has stated that "the governmental machinery was altogether inadequate to immediately meet the emergency" of the war with the Kingdom of Spain, the responsibility for our unpreparedness must be laid primarily on that branch of our government, to which the Constitution has delegated the power to "provide for the common defense," and to "raise and support armies."

If the beginning of the war with Spain—a second-rate military power, and a degenerate in political and commercial importance—found our country without accurate maps and statistical information of our adversary's military resources; lacking in carefully formulated plans of mobilization, concentration and campaign; without magazine rifles,* smokeless powder, and breech-loading cannon for our reserves, and with reserves themselves—the peers of any soldiers on earth in intelligence, bravery and military initiative, but absolutely ignorant of the more serious phases of war; if, we repeat, this comparatively petty war found us more or less unprepared, what must have been our loss in lives, treasure and national prestige had we been pitted against a first-class power. That is a question which may well give us pause.

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*There were 53,508 United States magazine rifles and 14,895 magazine carbines, caliber 30, including those in the hands of regular troops. In addition, there were 265,895 Springfield rifles caliber .45, and 7,893 carbines for which there was no smokeless powder.

MOBILIZATION AND CONCENTRATION.

The war with Spain, declared from the 21st of April, 1898, found us with the smallest Regular Army, in proportion to population,* that we have had at the beginning of any of our wars. It consisted of but 2143 officers and 26,040 enlisted men, *or less than four-tenths of one per cent. of our estimated population.*

A large percentage of its officers were graduates of the Military Academy, and it may be said, without fear of contradiction, that never before was its enlisted personnel so highly trained and disciplined for the emergency which confronted them. The army was at this time organized into ten regiments of cavalry, twenty-five of infantry, and seven of artillery.

By the Act of Congress of April 26, 1898, the third battalion of four companies was given to infantry regiments, and the regular force was authorized to be increased to 61,000 men. During the month of May following, its strength had been recruited to 44,125, and in August, at the time of signing the protocol with Spain, it had reached a strength of 58,688 officers and men.

By authority of the law of April 22, 1898, the President issued a call for 125,000 volunteers, and on May 25th following, for 75,000 additional. All of these were state troops, organized after the manner of volunteers of the Civil War, but Congress further authorized the organization of sixteen regiments of United States volunteers.

By the end of the month of May, 124,804 volunteers had been organized into regiments and mustered into the United States service; by August this number had been swelled to 216,029, and the total number of regulars and volunteers was 274,717 officers and men. These figures are not merely given as statistics of historic interest. They are exponents of the rapidity of recruiting volunteers at the beginning of a popular war, but as will be shown later on, they are unfortunately no index to the military quality of such levies.

Before passing from the subject of the President's call for volunteers, it is interesting to note that under the Constitution the power to "raise and support armies" resides in Congress.

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*War of 1812, Regular Army, 6744, or .87 to 1000 of population; Florida War (1818), Regular Army, 3888, or .42 to 1000 of population; Mexican War (1846), Regular Army, 8613, or .42 to 1000 of population; Civil War (1861), Regular Army, 18,093, or .56 to 1000 of population; Spanish War (1898), Regular Army, 26,040, or .38 to 1000 of population.

Should, therefore, a great war emergency arise during the recess of that body, the country would be entirely dependent *ad interim* on its Regular Army. The necessity for such additional volunteer force while Congress was assembling would seem to be very remote, were it not recalled that just such an emergency has arisen once before in the nation's history. In May, 1861, President Lincoln assumed dictatorial powers in violation of the Constitution, increased the strength of the Regular Army and called for volunteers, and directed the Secretary of the Treasury to advance two millions of dollars without security, for immediate military necessities. When Congress assembled on July 4th following, the President's action was, of course, legalized, but the necessity for such action may occur again. Congress has recently authorized the President to increase the regular forces to a maximum of 100,000 men, but, as will be referred to later, further legislation is necessary, looking to the enrollment of a volunteer reserve.

The Volunteer Forces.—A not unexpected deduction from our experiences in the Mexican and Civil Wars was that the efficiency of American volunteers was to be measured by the previous training, professional zeal, and soldierly discipline of their officers. The enlisted personnel has ever been of splendid natural quality, and has not varied considerably in different regiments. Trained officers have by no means been numerous.

The Spanish War was no exception in this respect, because the same obsolete system of selection of officers was followed as in former wars, and naturally the same results followed.

The Act of Congress of April 22, 1898—before referred to—designated the two branches of the military establishment as the Regular Army and the Volunteer Army of the United States; and following the precedent of the Civil War—legislation so strongly condemned by the late Maj.-Gen. Emory Upton*—left the appointment of officers of volunteers to the governors of the several States.

Such a method of selection was justified at the outbreak of the Civil War on the ground that volunteers were militia, and by the Constitution the appointments were to be reserved to the States. That volunteers are not militia has now long been held. But in both the Civil and Spanish Wars the main reason for following the old system appears to have been that no better system had ever been carefully thought out, which

*See Upton's Military Policy of the United States, (pp. 258 259).

was acceptable to the States. In such emergencies as ever follow a declaration of war, there is no time for new systems to be prepared; State patronage demands the appointment of officers, regardless of qualifications, and so urgent are the necessity and straits of the national government in such crises, for the rapid mobilization of troops, that all other considerations give way to it. As will be shown later, this obsolete system, unworthy of a great government and unjust to the gallant soldiers who are compelled to accept the officers whom the government gives, is still a part of our military system under existing law, and should war be declared to-morrow, the same defective scheme of selection would obtain.

Volunteer regiments organized under the act of April 22, 1898, differed very widely in efficiency and discipline, as was to be expected. Some states had given extraordinary encouragement to the training of their militia along practical lines; others, as we all know, were mostly a paper force without any real value as a national asset. In such regiments as included a regular officer in its personnel—limited by law to one—there was greater progress made, other things being equal, than in regiments officered entirely by volunteers. Some regiments were mustered in well-equipped with uniforms, arms and accouterments, and under excellent control by their officers; others reported for muster in such a state of disorganization as to be equally dangerous to friend and foe. There were many excellent volunteer regiments, but they became so in spite of the system then in operation, and not in any way by reason of it.

There can be no possible doubt that in due time, with patient labor and unceasing training, such volunteers as were concentrated in the great camps during the year 1898, could, as was the Army of the Potomac under McClellan, have been gradually molded into a dependable force. But bearing in mind the suddenness of modern wars, as well as their comparative shortness of duration, it is very doubtful if thirty per cent. of the volunteer forces mustered in during the war with Spain, became entirely dependable for service against the regular army of a foreign power during the entire period of their service.

As distinguished from these volunteer regiments of the Spanish War, were those United States volunteers, organized under the Act of Congress of March 2, 1899—the following year—

for service in the Philippines. As volunteer regiments, it has been the almost unanimous verdict that they have never been surpassed. Certainly never, in such a short space of time, have such excellent troops been organized, trained and put in the field.

If the cause of this efficiency be analyzed, it will be found to have resulted from four factors:

1. In most cases the field officers of the regiments were selected from experienced officers of the regular service.
2. The company officers were principally selected by the War Department, from officers who had served creditably in State organizations during the war with Spain.
3. The fact that from this method of selection the officers were in no way under obligations to the men under them.
4. From careful selection of the enlisted personnel, accepting only the physically perfect, and after enlistment summarily discharging those deficient in the qualifications of a good soldier.

Under this Act of Congress, 1524 officers and 33,050 men were enlisted, organized, equipped, and instructed, and were on their way to their destination in less than six months from the date of passage of the law. They proved themselves a thoroughly reliable force in the Philippines, and it was largely through their aid, that the Philippine insurrection was checked, and relapsed into guerrilla warfare.*

Present Legislation.—The defects of our earlier volunteer organization, and the immense advantages of our later system, have been patent to us for the past five years. What, if anything, has been done toward an improved organization in time of war, and toward the formation, training and inspection of forces supplementary to the Regular Army?

If we examine into the legislation enacted since the Spanish War affecting these questions, it will be found that, outside of the adoption of the three-battalion organization for infantry and the corps organization for artillery, the most important and far-reaching is that known as "An act to promote the efficiency of the militia, and for other purposes," approved January 21, 1903.†

*In the years 1900 and 1901, the regular regiments in the Philippines were so disorganized and depleted by the discharge of old soldiers, and their recruitment by untrained men, that they often suffered at this period by comparison with the regiments of U. S. Volunteers. There were no facilities for drilling recruits in the Philippines, and a long period elapsed before the regulars could rise to their former standard.

†Commonly known as the Dick Bill.

The policy of our Government with regard to a limited standing army, and with recourse to volunteer forces in war, has so often been affirmed* as to have the force of unwritten law. In future wars it is extremely improbable that we shall dare to put a lesser force in the field than 300,000 men, so that, with expansion of our Regular Army to its superior limit, there will be need for reserves of some character to the number of at least 200,000. To provide such a force, of fair physical and mental standards, knowing how to shoot, and with some knowledge of the elementary problems of field-service—most of all with officers of some ability and experience—would be the object of legislation, and the Act of Congress above referred to—more commonly known as the Dick Bill—was intended to provide such a force.

Although containing some vital defects, stamping it at once as a compromise measure, it is such a vast improvement on the old militia system, that the country may well be thankful that such an advance in progress has at last been made. In considering the imperfections of the bill, it must be borne in mind that militia legislation must conform to the constitutional requirement, placing the duty of providing arms, organization and discipline, on Congress, but reserving to the States respectively the appointment of officers, and the authority of training the militia according to the discipline prescribed by Congress.

A brief synopsis of the bill will be made: It deals first with the question of militia, and second with volunteers. After prescribing those citizens liable to and exempted from militia service, and the manner of calling forth the militia for a period not exceeding nine months to suppress insurrections and repel invasions, it provides for issues of arms, ammunition and other military supplies by the national government; for regular inspection by officers of the army detailed by the Secretary of War; for participation by the militia in joint maneuvers with the Regular Army; for pay and allowances to militia participating in encampments, and for the attendance of regular officers at such encampments, at the request of the governor thereof.

The second part of the bill† deals with the subject of future volunteers, and provides for securing an eligible list of persons

*See Reports of Secretary of War for 1900 and 1901.

†Section 23.

specially qualified to hold volunteer commissions, by examination through army boards of those persons having previous service in the regulars or volunteers, or in the National Guard. But appointments from this eligible list shall not be deemed to include appointments in such regiments of the organized militia as volunteer in a body, or the officers of which are appointed by the governor of a state.

The following section prescribes that future volunteer forces shall be organized as provided by the Act of Congress approved April 22, 1898, which, as we have seen in a previous discussion of the subject, gave over the appointments of volunteer officers to the governors of States.

The bill, as originally drawn, contained a section following that which pertains to the qualification of officers, providing for the enrollment of a volunteer force of 100,000 men in time of peace, to which these qualified officers might be appointed, and to which unrestricted gubernatorial State appointments were not to apply. But in the passage of the bill this most important provision was stricken out, thus rendering nugatory, in a way, this portion of the bill. Volunteer officers are provided for, but no volunteer reserve to which these officers can be appointed—excepting the trivial force authorized under the old law of April 22, 1896.* It is to be hoped that future legislation will provide for a volunteer reserve, and the General Staff of the army should frame such a basis of organization as will give the country a body of soldiers, supplementary to the Regular Army and the organized militia.

The weakness of any militia system— aside from its limitations as to the period and place of its military service—has been a matter of history. In 1870 General Washington indited these significant words to the President of Congress: "Regular troops alone are equal to the exigencies of modern war, as well for defense as offense, and whenever a substitute is attempted it must prove illusory and ruinous. No militia will ever acquire the habits necessary to resist a regular force. * * * The firmness requisite for the real business of fighting is only to be attained by a constant course of discipline and service."†

In the year 1812 both Massachusetts and Connecticut absolutely refused to furnish the militia called for by President

*Of this bill, as finally passed, the Secretary of War has said: "It does not represent fully anyone's views, but contains many important provisions upon which an agreement has been reached."

†Sparks' Writings of Washington (Volume 7).

Madison; in 1861 the States of Virginia, South Carolina, Kentucky, Tennessee, Missouri and Arkansas, made a similar refusal; and during the recent Spanish War it was possible for for an unwilling State to furnish its volunteers from another State.* These incidents draw attention to the factor of States' rights, which has more than once caused embarrassment to the Federal Government. In spite of the fact that the Constitution declares that "a well-regulated militia being necessary to the welfare of a free State," etc., it is hazardous to depend wholly upon such a force as a first reserve, either as militia proper or as militia-volunteers. While the office of the Military Secretary has recently reported that probably 75 per cent. of the organized militia would respond to a call for service in war, such an estimate is, of course, merely conjectural.

However, the militia of Bladensburg and the First Bull Run can in no way be compared in personnel, equipment and training to some of the splendid organizations that form part of our system to-day. The Dick Bill has made possible, in the militia, an admirable training school for future volunteers, and it is the bounden duty of every officer of the Regular Army to contribute in every way in his power to increase its efficiency, trusting to future legislation to correct such defects as appear from time to time.

As it stands to-day the law contemplates the following war forces at the disposal of the Commander-in-Chief:

1. The Regular Army with a maximum strength of 100,000 men.

2. The organized militia, trained as a National Guard, and limited by the Constitution to service within the United States and for a period not exceeding nine months.

3. A First Volunteer Reserve composed of such organizations of the militia as would volunteer for war in a body with all their officers and men.

4. A Second Volunteer Reserve, to consist of men of previous military training, enrolled in time of peace, and commanded by officers who had qualified for such service before army boards. As previously stated this pre-enrolled force is at present limited by law to but 3000 men, although originally contemplated to number 100,000.

5. Regiments of State volunteers, commanded by officers appointed by the governors thereof.

*See article in the *United Service* for July, 1903, by Brig.-Gen. William H. Carter, U. S. A., entitled "*Infantry in War*," page 15.

THE STAFF DEPARTMENTS.

If the military emergency following the outbreak of the war with Spain was a severe test of the troops of the line, it was even more so of the staff.

Most staff corps and departments were at the outset badly weakened by drains on their personnel for service with volunteer troops, and again, in expanding to war strength, the extra officers were quite generally supplied from volunteers of little or no experience. The crying need of the hour was *more trained officers.*

The Ordnance Department was confronted with the gigantic task of arming and equipping an army of over 250,000 men, and with making good the deficiency in seacoast ordnance and ammunition. Reserve supplies were at a minimum. As is well known, there were only enough small caliber rifles to equip the Regular Army, and in many cases the States' arms and equipments were in such lamentably poor condition, that they must needs be replaced. This latter drawback was so much in evidence that the Chief of Ordnance of that period has stated that the volunteer forces would probably have been ready for service quite as quickly, had they been newly equipped by the national government, rather than have relied on the defective arms and equipments of their respective States. There was no smokeless powder for the Springfield rifles, and of powder and projectiles for the fortifications, only one-fifth of the required supply was on hand.

Such unpreparedness for the ever possible contingency of war required most strenuous effort by this department, and it may be said that it rose to the occasion with most commendable results.*

The Engineer Corps, with a large percentage of its officers in charge of civil improvements, hurried the completion of many seacoast works, and began the installation of a system of submarine mines†. Its commissioned strength was increased from 109 to 127 officers.

The Signal Corps was suddenly increased from a peace strength of ten officers and fifty enlisted men, to an aggregate of

*By August 31, 1898, the Ordnance Department had increased its daily output of magazine rifles to 370, and of small arms ammunition to 180,000 rounds. It had procured 250,000 sets of infantry, and 26,000 sets of cavalry equipments; had purchased and had under contract, or under manufacture, 336 rapid-fire guns; and had procured a total of 486 seacoast guns or mortars.

†Duties since transferred to the Artillery Corps.

1300 officers and men, and in spite of the handicap of such an unforeseen increase, performed creditable service in the Santiago, Porto Rico and Philippine campaigns, as well as in the maintenance of submarine cables. Its personnel was shown to have been far too small on a peace footing, but it had the advantage, as it will ever have, of being able to draw largely for its recruitment on civilian telegraphers, electricians and mechanics. Of all the staff corps its increase was perhaps most easily acquired at the outbreak of hostilities.

The Quartermaster's Department had possibly the most herculean task before it. Without reserve supplies, it was called upon to furnish, within three and one-half months, clothing, equipage and field transportation for practically 275,000 men; to transport thousands upon thousands of soldiers to the concentration camps, and afterward to their homes; and to organize and maintain on the Atlantic and Pacific seaboards a transport service which ultimately extended to the West Indies, China and the Philippines.

From April 1, 1898, until the breaking up of Camp Wykoff, no less than 17,863 officers and 435,569 men had been transported by rail, and up to September 15th of the same year, 92,836 had been transported by ships. Up to August 31st, 5130 field ovens, 36,800 horses and mules, and 5179 wagons had been purchased by the department. These figures will serve to show the immense responsibilities the officers of this staff department had to face.

At the beginning of hostilities its commissioned personnel was limited by law to but fifty-seven officers, and its necessary expansion had to be made either by the detail of much needed officers of the line, or by the appointment of inexperienced quartermasters from civil life. Both methods were resorted to.

That the nation which postpones preparations for war until the actual declaration of war rarely economizes, is to be inferred from the vast appropriations for this department. During the year 1898 this mounted up to $130,461,367.75, a large part of which could doubtless have been saved to the government by previous wise legislation, having in view a prudent accumulation of reserve supplies at peace prices, and, as will be discussed later, the organization of an army service corps to handle the stores which this immense sum represents.

The Subsistence Department had, at the beginning of the war, but twenty-two officers, and by the act of April 22 and

July 7, 1898, about 120 additional officers were added to the establishment. Its work in the large camps of concentration, and in the succeeding campaigns was highly satisfactory, and demonstrated its efficiency. Most complaints of insufficient food could be traced to ignorance of the handling of the government ration, and criticisms of the quality of the latter were eihter founded on misinformation or were due to the deterioration inseparable from every period of field-service.

No army of its size was ever more judiciously and abundantly provided with food. Special foods were selected for troops in the tropics, and an extra sum provided for the purchase of delicacies for the sick in hospitals.

The need of an army service corps was also felt in this department, and it is safe to say that the government would have been saved many thousands of dollars through the more efficient handling of perishable stores.

The Medical Department had but 192 officers to begin the war, and this totally inadequate number was supplemented by the make-shift policy of appointing over 650 contract surgeons, and by adding 118 volunteer surgeons—forty-one of whom were officers of the regular establishment. The President also appointed three surgeons for each of the regiments of United States Volunteers.

The enlisted personnel was so insufficient that approximately 6000 men were enlisted or transferred to the corps during the war with Spain. This force was augmented by the employment of over 1700 female nurses.

The mobilization of volunteer troops found most of the regiments with defective medical equipment or without it altogether, necessitating the immediate purchase of six months' medical supplies for 100,000 men.

Except during the Santiago campaign and the Philippine insurrection, the duties of the medical corps were confined principally to camp sanitation and camp diseases. The large percentage of sickness during the Spanish War and Philippine insurrection must not be taken as an indication of inefficiency by the medical corps, except perhaps, in exceptional cases where laxity in sanitary inspections or failure to anticipate requisitions for supplies by inexperienced surgeons, gave legitimate cause for criticism.

The war demonstrated the absurdly inadequate strength of the medical corps on a peace footing, and the need of a highly

organized field-hospital and ambulance corps for field-service. In no staff department, perhaps, does a state of war cause such a revolution in organization as in the Medical Department, and on no other does the weight of censure fall so heavily for mistakes of omission and commission.

The Inspector-General's Department, which, of all others, must needs be kept filled with its complete quota of highly trained and experienced officers, was most depleted by details to the line. Its strength, already insufficient for holding a large army of volunteers up to normal sanitary and tactical standard was supplemented by the appointment of twenty-five officers with volunteer commissions, some of whom had had absolutely no experience with troops prior to the war, and who, moreover, had no especially natural gift for such service.

The Adjutant-General's Department at the outbreak of war was the only staff department resembling in any particular the General Staff Corps of highly organized armies. For nine years preceding 1898, a division of military information had been maintained as an adjunct of this department, but, through no fault of its officers, had been so dwarfed and subordinated to the routine work of the department, that the outbreak of war with Spain found it without accurate maps of the enemy's territory, and with but meager information of his defenses and military resources.*

In addition to handling the immense correspondence incident to the organization, mobilization, muster-in, and concentration of a vast volunteer army, the adjutant-general's office at Washington was called upon to assist in the preparation of plans of campaign, and subsequently to prepare the necessary orders for carrying these plans into effect. Again, the large amount of sickness in the volunteer camps entailed in itself a vast correspondence, while the personal importunities of politicians, friends and relatives of officers or men, strained the system to the breaking point. Finally, came the muster-out of the volunteer forces, and the reduction of the army to a peace footing.

Too little credit has ever been given this department for its work during the Spanish War—and even later, during the Philippine insurrection and China Relief Expedition. The fact has frequently been lost sight of that the mistakes of omission and

*Due credit should be given Lieuts. Andrew S. Rowan and Henry H. Whitney, who went to Cuba and Porto Rico, respectively, to obtain military information.

commission were rather due to the system in vogue, than to any neglect or inefficiency of the department itself. Practically half a dozen officers performed duties which in most foreign armies would have been developed and executed by half a hundred trained officers of the General Staff.

Looking back on the successes and failures of the various staff departments of the army, an impartial mind must conclude that the clogging of the wheels of administration was principally due to the accumulations of rust during many years of peace. Generally speaking, the methods of requisition, supply and accountability were excellent ones for a small army engaged in nothing more serious than an Indian campaign or a labor riot; but for the needs of from a quarter to half a million men, with dependence on untried and inexperienced staff officers, it was inadequate.

In attempting to analyze the specific causes of staff maladministration—disregarding entirely the personal error of the officers concerned—the following appear most important:

1. *Lack of a General Staff Corps.*—The necessity for a General Staff would not have been an unnatural deduction from our experiences in the great Civil War. The utter helplessness which Mr. Lincoln experienced at the outbreak of the war is best illustrated by the fact that he actually turned to the Secretary of the Treasury for the initial organization of our regular and volunteer forces in that war;* while his subsequent dependence for expert advice on a succession of officers and civilians led to confusion and demoralization, and certainly contributed in no small degree to the prolongation of the rebellion.

Undisturbed by our experiences during this great war, thankful only that it was ended without disrupting the Union, unmindful of the increasing complexity of warfare during the advancing years, and disregarding the example of the great powers of the world—the Spanish War found us again unprepared in all those things for which a general staff is responsible.

Plans of campaign had not been prepared, nor could they be prepared until accurate maps of the enemy's country were forthcoming. Plans of mobilization had received little or no attention, and no efficient system of the organization, equipment and peace of training our reserves, had been worked out

*See "Upton's Military Policy of the United States," page 233.

in detail. The staff departments failed to pull together according to any settled governmental policy—in fact, there was rarely any policy that was not liable to continual change or amendment, with the shifting about of individual officers of the War Department, and the successive changes of administration. In a thousand ways there was a lack of co-ordination which not only led to miscarriage of plans, but to extravagance in expenditures and lack of harmony in administration.

The purpose and operation of a General Staff has hitherto been somewhat of a mystery to our service, and even now it is not thoroughly comprehended in its details. But to those who have made an earnest study of its functions in peace and war, and the splendid results attained by its industry in foreign armies, it seems very clear that no one defect of our military organization in 1898 contributed so materially to weaken us as the want of a carefully organized General Staff.

This want was provided for by the Act of Congress of February 14, 1903, and took effect on August 15th, following. Besides prescribing in a general way the duties of the new body and of the Chief of Staff, the act provided for changing the designation of the commanding-general, for the obvious reason that under the Constitution the President alone is Commander-in-Chief, and in past years bestowal of the title without the legal right to command had led to endless friction and ill-feeling.

Under existing law, the Chief of Staff is simply military adviser to the President, aided in his deliberations and conclusions by the General Staff, and the law very wisely places under his direct supervision not only all troops of the line, but also the various staff corps—hitherto independent of any military control except that of the President or Secretary of War.

In practice, the General Staff has been classified as the War Department General Staff, and the General Staff serving with troops.

The former has been organized for convenience into three divisions, with appropriate duties pertaining to each: the first, generally speaking, dealing with army administration, the second with the collection and distribution of military information, and the third with questions affecting the technical services, military education and plans of campaign.

Since its organization the General Staff has studied and passed upon a multitude of important military questions, with

credit to itself, and with unquestioned benefit to the army. Being an advisory body, its work is and will continue to be largely confidential in character, aside from those military matters which, from their nature, are properly kept secret. Hence the tangible results of its efforts will rarely convey to the public an adequate comprehension of the full extent of its labors.

If there would seem to have been too great a tendency toward purely administrative work, crowding out many general-staff duties, time and experience will probably correct it. On the other hand, the present close application to mere office work may bring about a lack of touch between the General Staff and the line of the army—a theoretical knowledge only of the practical workings of army regulations, which in past years has afflicted many worthy officers of the staff. This latter tendency should be obviated by causing general-staff officers to make frequent tours of inspection or observation of troops and fortifications, preferably of a different arm of the service from their own, to broaden their horizon, and to place them *en rapport* with the fighting men.

This naturally leads up to the duties of general-staff officers serving with troops, whose duties have hitherto not been specifically defined by orders and regulations. As a rule, two such officers have been assigned to the headquarters of each geographical division—the senior acting as chief of staff, with duties analogous to those of the Chief of Staff of the army; the junior, acting as assistant with other duties undefined. This has led to more or less confusion and misunderstanding, as the duties of adjutants-general and inspectors-general at division headquarters are in most foreign armies general-staff duties pure and simple.

It would, therefore, seen expedient that one of two things be done: (1) Either that the junior general-staff officer at division headquarters be relieved and ordered for duty with the War Department General Staff,* or (2) that the duties of adjutants-general and inspectors-general at division headquarters, be taken over, *in toto*, by general-staff officers.

The latter scheme would harmonize the several classes of duties at the headquarters of troops, would bring general-staff officers in closer touch with troops, and in time of war would

*This has at present been partly accomplished by detailing most of these officers to tours of duty at the Army War College.

better enable them to organize and maintain an intelligence service which is essentially a function of the General Staff.

Such a radical but perfectly consistent course of action would, of course, do away with the necessity of detailed adjutants-general and inspectors-general at the headquarters of divisions, returning these officers to the line of the army, where they are at present badly needed; and would contemplate retaining the permanent officers of these corps for duty at Washington in the offices of the Military Secretary and Inspector-General, respectively.

This would ultimately have but one ending: the incorporation of the Military Secretary and Inspector-General's Departments in the general staff,* as was originally contemplated by the framers of general-staff legislation. The duties of both departments are, as has been noted, so intimately connected with general-staff work that, in the course of time, it is perfectly logical that a consolidation should take place.

One other change in connection with the General Staff has suggested itself: That the two general officers on duty as assistants to the Chief of Staff, or, preferably, two additional general officers should be designated as, and take over the duties of, chiefs of cavalry and of infantry, respectively; in either case to be *ex officio* members of the General Staff.

The same excellent results which have contributed so materially to the efficiency of the Artillery Corps, since the creation of the office of Chief of Artillery, would undoubtedly accrue to the Cavalry and Infantry. These branches of the service are every day becoming more complex in all armies, and creation of the new offices would undoubtedly relieve the Chief of Staff of many vexatious details in regard to armament, equipment and training.

2. *Lack of Trained Staff Officers at the Outbreak of War.*— This second factor of inefficiency in staff duty has already been briefly referred to, in discussing the necessity for the appointment of many volunteer officers to staff positions with little or no experience.

This deficiency has since been partly remedied by legislation creating the office of regimental commissary, and by making the adjutants and quartermasters of regiments extra captains; and by the addition of adjutants, and quartermasters or com-

*See reference to this measure in the annual report of Maj.-Gen. Henry C. Corbin, Commanding the Atlantic Division, for 1904.

missaries, to the organization of cavalry squadrons and infantry battalions. These additional officers with staff experience will, in the next war, give us so many more available officers for duty in the expanded staff corps. Moreover, the custom now obtains in many regiments of detailing the younger officers in rotation, for short tours of duty in the staff departments at army posts, thus giving them practical experience which may later be turned to account.

The permanent personnel of the Medical, Quartermaster's, Commissary, and Paymaster's Departments, and of the Engineer and Signal Corps, have all been increased since the Spanish War, and at present the prospects are good for a further increase in the Medical Department, and that the greatly overworked Ordnance Department may be enlarged to a strength commensurate with its increasing multiplicity of duties. If, to the casual observer, the personnel of these staff departments appears excessive and top-heavy, it must ever be borne in mind that good staff officers are the product of training, and that the outbreak of war is an inopportune time to receive such training.

In addition, extra officers have been given to the army by legislation, permitting officers on the retired list to perform such duties as the Secretary of War may prescribe, thus releasing so many more active officers for duty with troops. Judging from the number of retired officers who volunteered for active duty in the last war, this measure would give us officers for recruiting, and for quartermaster and commissary duties at the bases and along the lines of communication—certainly for home defense.

To supplement the staff officers obtained from the Regular Army, opportunity is now given under the Dick Bill for former members of the regular or volunteer service and of the militia, to qualify as staff officers before the examining boards provided by the law. As a preparation for this examination the same law now permits militia officers to attend army schools, and provides such student officers with travel and subsistence allowances, and with quarters. In addition, the impetus given to military education throughout the United States by a thorough revision of the regulations governing military schools to which officers are detailed, cannot fail to increase the desirable class of young men from whom our volunteer staff officers may be drawn in time of war.

3. *Lack of Touch between Line and Staff.*—That such a

condition existed at the beginning of the late war—more especially with the older class of officers of the staff departments, was an opinion quite frequently voiced by officers of the line of the army. With more or less justice, it was claimed that many staff officers had been so long away from direct contact with the line, as to lose knowledge of and interest in its needs.

During the long period of peace following the Civil War, an idea seemed to have gained credence in some quarters that the *staff* was the army, and the outbreak of war alone brought full realization of the fact that the *fighting men* are the army, and that the staff is created by law solely for the army's care and maintenance. Such a relation between line and staff, limited though it happily was, could not but result in some loss of efficiency.

To partly meet this difficulty a system of details from the line of the army to the staff departments has been initiated and successfully maintained in all the staff except the Medical Department, Engineer Corps, and Judge-Advocate General's Department.* Except in the Ordnance Department and Signal Corps, where it has been difficult to secure desirable officers, the system has appeared to work satisfactorily. That a permanent personnel of staff corps has many advantages in building up *esprit de corps* and in establishing a continuity of trained officers, is not to be denied. But practically and ultimately it is believed that the detail system will give the best results for the army at large, giving (1) a greater number of trained staff officers for an expanded army in time of war; (2) greater familiarity with the needs of the line by the compulsory periodical service with the line; and (3) a trying out of officers in the lower grades, eliminating incompetents and permitting, as the law allows, filling the grades above that of major by continuously detailed officers.

The line of the army appears to be entirely satisfied with the results obtained by the detail system. Its chief drawback seems to be that requirement which often prematurely takes an officer from staff duty upon his promotion in the line, thus begetting constant change. However, as promotion in the line becomes slower, this objection will probably be minimized, and if not, will be a fit subject for consideration by the General Staff.

*This measure was strongly recommended by Secretary Root in his annual reports for 1899 and 1900 finally becoming law February 2, 1901.

In addition, the question of consolidation of the Quartermaster's, the Commissary, and possibly the Pay Departments, will also deserve attention, on the ground of greater simplicity of operation, economy of administration and reduction of paper work. One of the most constant requests received from commissary officers in the field is for control of their own transportation. Certainly there can be no better way of providing it, as well as of co-ordinating the two departments, than to consolidate under one head.

4. *Lack of an Army Service Corps.*—A system which takes from the fighting line a large proportion of trained soldiers for service as clerks, teamsters, blacksmiths, mechanics, and other non-combatant duties, and which, in time of peace, pays these soldiers more liberally than it does the company non-commissioned officers, is not a good system for peace or war. It destroys esprit de corps, cheapens the non-commissioned grades, and in many ways demoralizes the service.

In past wars the civilian element employed by the Government has been a constant menace to good order and even to security, and though amenable to military law, their actions are much more easily regulated if organized into a uniformed, enlisted, disciplined corps, particularly if largely composed of old soldiers of established character.*

The Spanish War and the Philippine insurrection particularly emphasized the need of such a corps. Much worthless material attached itself to the army in various capacities, staff officers were handicapped by unreliable employees, and when summarily discharged—more especially in the Philippines—they actually became a menace to the community.

It can easily be seen that in a great war, such as is now being waged in the Far East, the use in the supply departments of anything but a highly organized service corps would lead to waste, loss of efficiency, and absolute failure of plans. A uniformed, disciplined organization of this character would also render our army far less liable to espionage by the enemy's spies were we involved in a foreign war.

It is believed that such a service corps could readily be organized by transfers from the line of the army, for the versatility of the American soldier and the many trades and professions to be found among the men in the ranks, had time and

*See Report of the Quartermaster-General for 1904, page 32.

again been demonstrated prior to the Spanish War, and was again surprisingly in evidence in that war, in the Philippine insurrection and even in the China Relief Expedition.

The two main divisions of such a corps would naturally be those of transportation and supply, and its organization would again emphasize the expediency of an early consolidation of the Quartermaster's and Commissary Departments under one head. The basis of field organization, and perhaps of that of peace, would preferably be the company, after the present tactical units of the signal, medical and engineer corps, and would facilitate administration and discipline.

The practical duties of the corps would fall under three heads:

1. A remount service, composed of a comparatively small number of non-commissioned officers and men transferred from the mounted service. As they would have more or less permanence of station, its personnel could be reserved for the older, married men of the corps.

2. A post service, to include our present post quartermaster and commissary sergeants, blacksmiths, bakers, mechanics, overseers, teamsters, packers and laborers.

3. A clerical service, to include our present enlisted personnel at post and regimental headquarters, and perhaps the lower grades of clerks at Department and Division Headquarters.

After initial organization such a corps would be recruited by original enlistments and by transfers from the line. One or two depots would give the men from three to six months' instruction in elementary military duties, together with special instruction in such matters as driving single, double, and four-in-hand), packing, horse-shoeing, veterinary first aid, etc.

In time of war the company would be the unit of expansion. The British service contemplates attaching twenty-two companies of the Army Service Corps to each army corps in the field.*

Finally, the advantage of such a service corps would not only be very much in evidence in the transportation and supply services, but it would react on the discipline of troops of the line so favorably that every officer of the line would welcome it as a

*Three companies at the base, two companies on the lines of communication, one company at the advance depot, fourteen companies with the units of the fighting force, two companies as bakers; total, twenty-two.

See Army Book for the British Empire, Chapters XIV and XXI.

relief from the incessant worry and constant drains on the fighting units, inseparable from the present system.

The United States is the only one of the great powers which does not possess such a service corps—whether under the name of administrative, train or intendance troops—and it is high time that we utilize what has been found so advantageous and practical in other armies.

5. *Lack of Reserve Supplies.*—As has already been stated, the Spanish-American War found us with practically empty storehouses.* The Ordnance Department had sufficient magazine rifles to arm the expanded Regular Army, but the volunteer forces carried the old Springfield rifle and fired black powder. The latter great handicap was apparently not thoroughly appreciated by the existing Ordnance Department until the Seventy-first New York and Second Massachusetts Volunteers found themselves at such a disadvantage at San Juan Hill and El Caney.

In addition to the present armament in the hands of the Regular Army and militia, it would seem only prudent that a surplus should be kept on hand of 50,000 for additional regular troops, 300,000 for a reserve volunteer force and an additional 50,000 to replace broken and unserviceable arms in the hands of the militia at the outbreak of war. Likewise sufficient reserve field-artillery and ammunition to equip at least three army corps of volunteer troops, with nine batteries to a division.

In the matter of subsistence stores, no country in the world is so independent of foreign supply, and can be so quickly and conveniently supplied by contract with private manufacturers.

The question of quartermasters' supplies—uniforms, tentage, harness, wagons and the like, representing in storage so much idle government funds subject to loss through deterioration, will always have to be considered in connection with the best interests of the service.

The entire question of reserve supplies is, of course, a General Staff question which should, and doubtless will, receive careful consideration. In the event of war that body will primarily be held responsible by the people of the country that proper provision has been made for such a contingency.

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*Secretary Alger has said in his book, "The Spanish-American War": "With empty military storehouses, the supply departments set to work equipping practically 250,000 men. The two bureaus most involved in this task were of course the Ordnance and Quartermaster's Departments."

6. *Governmental Supervision of Communications in War.*—Considering the immense bearing that public lines of communication and transportation have on military operations, with particular reference to the work of the staff departments, it should, in future wars, be one of the earliest enactments of Congress to place the railroads, steamship lines, telegraph and telephone lines of the country, or at least of the military zone nearest the points of concentration of troops, under the direct control and supervision of the President.

There are few officers of Spanish War service with troops who cannot recall the many vexatious delays in the carriage of troops and stores, and the almost complete subordination of the public welfare to commercial interests. No well-informed officer will pretend that lines of public transport can ordinarily be managed as efficiently by army officials as by the regular employees—although history records that it was done in a wonderfully satisfactory manner during the Civil War, in the Philippine insurrection, and by Russian troops in the advance on Peking. What is desirable, however, is such supervision by army officials of railroad experience (regular or volunteers), as will afford the greatest expedition, safety and secrecy in the despatch of troops and supplies, with the minimum of inconvenience and delay to private interests. Likewise, such censorship of public telegraph and telephone lines should be established as will prevent a repetition of the publicity given to each military movement at the beginning of the Spanish War.

If, at the outbreak of hostilities or even when the expedition against Cuba was contemplated, the President had been authorized to take possession of all railroads, telegraph and telephone lines south of the Potomac and Ohio Rivers and east of the Mississippi River, who can doubt that the interests of the Government would have been better subserved, the Tampa concentration would not have been published in the European newspapers, and it is quite possible that the scandalous congestion of traffic in the vicinity of Tampa and Port Tampa would have been prevented or at least controlled.

A notable precedent for such action is afforded by the Act of Congress approved January 31, 1862, giving the President absolute possession and control of all telegraph and railroad lines in the United States, whenever in his judgment the public

safety required it.* For commercial reasons the tendency will ever be for postponement of so radical a measure, until, perhaps, it is too late; but the importance of the question has more recently been demonstrated in the celerity, secrecy and ease with which the Japanese armies have been transported to Manchuria, and again, in the unanimity with which the great powers of the world have agreed on the necessity for government control of wireless telegraphy.

RECRUITMENT IN WAR.

The duration of the Spanish War was so short as to afford little data on which to base a system of recruiting suitable for our form of government, and designed to keep the ranks of both regulars and volunteers filled to the maximum *in a long, severe, or unpopular war.* But taken in connection with some of the serious mistakes of the Civil War, and with certain experiments in recruiting for the Philippine insurrection, our experiences should be able to develop some general policy, worthy of adoption.

As is well known, the stress of political considerations during the Civil War, aided by our dual system of government, forced the Federal authorities at that time into the serious error of organizing hundreds of new volunteer regiments, when every consideration of prudence, economy and military efficiency should have dictated a policy of keeping the ranks of the veteran regiments filled with trained recruits.

As a result, absenteeism increased to an alarming extent, malingering continued unchecked for a long period, thousands of officers and men secured leaves of absence or furloughs, and a large number of convalescents were discharged for disability from general hospitals, when they should have been returned to the colors. So seriously were the Union armies depleted, that in spite of our traditional but mistaken antipathy to compulsory military service, the third year of the war saw recourse to the draft.

On June 15, 1862, such were the evasions of military service that out of a total strength of 144,407 men in the Army of the Potomac, only 88,665 were present for duty. And on June 30, 1864, there were in all the armies 146,130 men absent

*The Act authorized the President "To take possession of any or all telegraph lines of the United States, their offices and appurtenances; to take possession of any or all railroad lines in the United States, their rolling stock, their offices, shops, buildings and all their appendages and appurtenances," etc.

sick, and 32,494 absent with leave—a total of 174,264 officers and men away from the colors.

The statistics of the Spanish War appear to show that if it had been prolonged, similar depreciation of the effective strength of our forces would surely have followed. The surgeon-general's reports show that the total admissions to hospitals increased from 10,208 in the month of May, 1898, to a maximum of 53,705 in the month of August following; and that the death rate from all causes increased from a ratio of 37. per 1000 in May, to 5.82 per 1000 in September. While not so alarming as corresponding statistics of the Civil War, they are sufficiently so to cause serious reflection.

The consequence of this great increase in the sick-report of the army was not only felt in loss of fighting strength, but it reacted on the administrative department of the Government in a most demoralizing way. The hospitals became filled with sick, and what almost amounted to a panic spread over the country. To be sure, much of this was due to foolish sentimentality, but it must be reckoned with in future wars. The War Department was inundated with correspondence relating to soldiers who were sick, or who were supposed to be sick, and was personally besieged by hundreds of relatives, friends and politicians, importuning the authorities for furloughs, leaves of absence or summary discharges. Instances are said to have occurred of half-sick soldiers hobbling into the adjutant-general's office without descriptive lists or other means of identification, and insisting that they be sent home. The general hospitals had been placed under the direct control of the surgeon-general, thus adding to the confusion at Washington by centralizing authority for discharges on surgeon's certificate instead of giving it over to department commanders—a mistake which in the Civil War led to many aggravated cases of malingering and shirking.*

Indeed, it must be very evident to all who have seriously considered the conditions prevailing in the month of September, 1898, that in the matter of army depletion and recruitment we were on the high road to the same grave state of affairs that virtually prolonged the War of the Rebellion.

The experiences of both wars alike point to the absolute necessity of a depot system, whether that depot be a regimental

*Compare General Orders No. 36, H. Q. A., A. G. O., 1861, and G. O., 114, H. Q. A., A. G.O., 1898.

depot, recruiting within a prescribed district for the regiment, or a company depot, recruiting for the battalion of which it forms a part.

It will be recalled that in the years 1899 and 1900, the government tried the home-battalion system with certain regiments designated for Philippine service, retaining the third battalion of each regiment in the United States, and including in its strength all the sick and physically unfit; while the remaining battalions took the field, recruited to their maximum with the strong and able bodied. In practice, the system placed a premium on physical disability and malingering, and was very wisely permitted to lapse. The depot system is a very different one.

The company depot system, which appears to have certain advantages possessed by no other, consists in designating one company of each battalion of a regiment as a depot company at the outbreak of war. The latter at once transfers the bulk of its personnel to the three other companies, retaining its officers and a certain number of non-commissioned officers and privates. It is provided with complete descriptive rolls of all the other companies and receives such data from time to time as will enable it to keep the records up to date, with especial reference to those soldiers of the battalion who return from the front for any cause.

The depot recruits within its allotted district, clothes, equips and trains its recruits; and from time to time forwards this new material to the depleted companies at the front. It receives back, in turn, the sick, the furloughed and the convalescent, and is responsible that, in due time, these absentees from the firing line are sent to their commands.

The company depots being administered and supplied direct by the commanders of geographical departments, the War Department is relieved from all further care—the commanding-general in the field directing the necessary travel to the depot, and the department commander or, it might be, the depot company commander, returning the men to the colors as circumstances might require.* The system is capable of adaptation to cavalry, infantry and field-artillery. With the

*The subject of the depot company has been treated very thoroughly in an article appearing in the *United Service Magazine* for July, 1903, by Brig.-Gen. William H. Carter, U. S. A., entitled "*Infantry in War*," from which the writer of this essay has borrowed many excellent ideas on recruitment in war.

coast-artillery it is believed that a system by which the second and third reliefs in time of war may be obtained from local militia organizations can be easily developed; and on account of lack of exposure to the dangers of field-service, their insignificant depletion will ordinarily require very little effort to keep the ranks filled.

A company depot system will have the following advantages:

1. It provides a healthy flow of trained recruits to the colors, independent of control of outside influences which might impair its efficiency.
2. It provides a suitable organization and assembling point for all soldiers absent from the battalion for any cause, and minimizes the possibility of malingering and shirking.
3. It decentralizes from the War Department the question of administration and supply, and delegates these duties to subordinate commanders.

While many minor objections, such as increased paper work for the men in the field, the question of suitable buildings and training ground for the depot, the difficulty of obtaining suitable officers and non-commissioned officers for such home duty may be urged, all are trivial and may be reduced merely to the tactical question of whether a three-company battalion is inferior to that of four companies. If it be decided in the affirmative, the four-company battalion may be left intact, and the company depot formed by detaching selected officers and men to form a provisional fifth company.

In any case, enough has been said to show the absolute need of strictly regulating the question of supply and demand; and that the depot system is the only system which, under our peculiar form of government, will satisfy all military and political conditions.

MILITARY EXPEDITIONS.

In addition to the arduous field-service between February 4, 1899, and July 4, 1902, incident to what is known as the Philippine insurrection, the Government has in the past six years sent four great expeditions into the field, the respective strength

of which, together with the killed and wounded in battle, are shown in the following table.*

DESTINATION	STRENGTH		KILLED		WOUNDED	
	OFFICERS	MEN	OFFICERS	MEN	OFFICERS	MEN
Cuba.....	869	17,365	21	222	101	1,344
Porto Rico	592	15,661	....	4	4	36
Manila ...	470	10,647	....	18	11	100
China.....	191	4,809	2	31	7	169
Total.....	2,122	58,482	23	275	123	1,649

To this might be added the causalties from bullets in the Philippine insurrection: 71 officers and 966 men, killed or died of wounds, while 2818 officers and men were wounded. Altogether, this tabulated statement shows that outside of the Santiago expedition, our casualties from firearms were very small, in proportion to the numbers engaged. The fact, however, that the deaths from all causes in the Philippine insurrection alone amounted to 140 officers and 4234 men shows that, as in all our wars, our most formidable enemy continues to be disease.

From a tactical standpoint it may be said that our expeditionary field-service was of too short duration to revolutionize any great principles of modern tactics. Our armies were duly impressed with the great range and flat trajectory of the modern small caliber bullet, and with the absolute necessity of using smokeless powder. The great value of hasty intrenchments, of fire discipline in connection with the magazine rifle and the difficulty of proper ammunition supply were all valuable lessons. But the most valuable, perhaps, was the experience gained by our officers in caring for their men under abnormal conditions of climate and topography. In general, it may be said that both officers and men have done their full duty wherever called, and have loyally upheld the honor and dignity of the flag of their country.

Equipment.—Our foreign field-service has, in spite of the sentiment attaching to the "army blue," convinced us of the

*Compiled from data given in Heitman's Historical Register of the United States Army, Volume 2.

practical utility of khaki clothing for the field—light weight, washable, cotton goods for the tropics, and the olive-drab, woolen material for the temperate zone. Through the efforts of the Quartermaster's Department a superior quality of khaki is now manufactured in this country, and it is no longer necessary to go abroad for it. Our campaign hats, leggings, blue-flannel shirts and marching shoes have proven good, practical articles. In the China Relief Expedition, there was opportunity for comparison with similar articles of foreign armies, and with the exception of better-fitting garments in which the English excelled, and which is now being remedied in our army, the United States articles of uniform compared very favorably.

Our magazine rifle, popularly known as the Krag-Jörgensen, has been tested under all conditions of service, and been found an accurate, durable and convenient weapon. The demand for a lighter magazine arm, loading with a clip, the magazine centrally located with respect to the center of gravity, and completely sheathed with wood, has led to the production of the new Springfield rifle for both infantry and cavalry—a weapon which, so far as tested, is said to have no superior in the armies of the world. The short rod-bayonet of the new arm is of doubtful usefulness and expediency for infantry, considering the reported hand-to-hand fighting in Manchuria, but is easily remedied, if final reports from the latest war seem to justify a resumption of the knife-bayonet.

The need of an intrenching tool has repeatedly impressed itself in the experiences of our expeditions, but our disinclination to further burden the infantry soldier, especially in a hot climate, with an individual tool, has prevented its adoption. In this connection the infantry soldier has up to the present found no substitute for the blanket-roll, which is superior to it. Our own experiences, as well as those of the English in the Boer War, show a tendency toward stripping the foot-soldier of all extra weight, and carrying the latter on pack-mules or small carts which can keep up to the march of the column.

In the cavalry there has been little or no change in equipment except the substitution of russet for black leather saddlery and the impending adoption of the infantry rifle to replace the carbine. As the new arm will weigh about one pound more than the old, and as no shifting about of the saber and saddle equipments will prevent a preponderance of weight on either

side of the horse, it may be found necessary to devise a new method of carrying the rifle, mounted.

The field artillery's experiences of the past six years with its steel breech-loading guns has been quite satisfactory, but in order to keep pace with the most recent foreign improvements, the artillery is about to be armed with new quick-fire, non-recoil field-pieces, embodying the latest and best ideas on the tactical use of this important arm.

Altogether, the equipments furnished the army by the Ordnance Department during our expeditionary period, has stood every test most creditably.

Transportation.—The wisdom of retaining our present splendid fleet of ocean transports has been repeatedly demonstrated, not only as a prudent military measure, but also as a matter of economy.* This fleet is ready at all times for either routine or emergency purposes, and the Government's experience with chartered transports during the war with Spain has proved that the comfort, efficiency and even safety of troops will suffer under any ordinary system of water transportation by contract. Substitution of one for the other could only be done at a sacrifice of our military efficiency as a great nation, having important island colonies in both hemispheres, and liable at any time to be called upon to defend the Monroe Doctrine with troops.

In the matter of land transportation our foreign expeditions have repeatedly shown the value and utility of pack transportation for countries in which our troops may expect service, *i. e.* those devoid of good roads. Most excellent wagon transportation is always readily obtainable from American factories in an emergency; but well selected and trained pack animals require a much longer period to make ready. Prudence suggests reorganization of the splendid pack-trains of our frontier epoch. The large and well-organized pack-trains between Siboney and Santiago-de-Cuba, and again between Tung-chau and Peking, China, saved many an American soldier from being hungry.

Subsistence.—After much faulty reasoning and some useless experiment, our authorities have wisely concluded that whether in Alaska or the tropics the American soldier requires much the same amount and variety of wholesome food that he has been

*The annual report of the Quartermaster General for 1904 shows that during the past fiscal year the earnings of the transport service, *i. e.*, the difference between the cost of maintenance (including the maintenance of idle transports), and the same service at commercial rates, has been $762,889.33—a striking balance in favor of the present excellent transport service.

accustomed to from childhood. In all our short campaigns since 1898, the real emergency ration has been the bacon, beans, hard-tack, and black coffee of the Civil War period, and it is extremely probable that they will continue to be with us the sinews of war. In the China Relief Expedition, where comparison with foreign rations was made possible, the unusual variety and abundance of the American soldier's ration was the wonder of foreign officers, and undoubtedly confirmed the opinion that ours is the best fed army in the world.

Sanitation and Disease.—The army's trying field-service under so many variations of climate has given it a valuable experience, which the Medical Corps of the army has fully appreciated. While the American soldier's neglect of health is almost proverbial and will probably continue so with the present short enlistment, the officers have gained practical knowledge of the prevention of camp diseases, and of the absolute necessity of observing sanitary requirements to preserve an effective fighting force. That it has taken some years to acquire this knowledge demonstrates the great importance of disseminating what we have learned among our future officers of volunteers and militia.

THE ARMY IN PEACE.

Since the final campaign of the Philippines insurrection, made notable by the use of humane but highly successful concentration measures, the army has enjoyed a period of peace—if we except the recurring small campaigns against the Moros in the southern Philippines.

The antecedent period had been one of constant field-service. Drills had, perforce, been neglected, and target practice was almost unknown to a large part of the army. While the army that went to Santiago-de-Cuba was largely officered by graduates of the Military Academy, the rapid expansion of the regular forces had given commissions to hundreds of young officers of very limited military education, and with loosely formed ideas on the subjects of subordination and discipline.

Such a condition of affairs required corrective measures, and the army forthwith entered upon a new epoch—the epoch of training.

Discipline.—It has been the experience of many nations that following a period of prolonged field-service there comes to

the army a certain loss of discipline and morale. To this experience our own army was no exception.

In the one item of desertions, the latter have steadily increased from 4.3 per cent. during the year 1901, to 9.8 per cent. during the the past fiscal year. During 1904, when demoralization due to Philippine service should theoretically, have decreased, there were 30 convictions of officers by courts martial, of which 9 were dismissed the service, and the sentence of dismissal of 4 was commuted to loss of files. Among the enlisted men the improvement was more marked, there having been 4249 trials by court martial—1026 less than in the preceding year.

Without going into further statistical data, nor into a detailed discussion of the causes of a reduced standard of discipline, these causes may be enumerated as follows: (1) The reaction due to sudden transition from field to garrison-service. (2) A poorer class of recruits due to good times and the present era of high wages for tradesman and laborers. (3) The presence in the army of many young officers of limited military experience, and more or less unstability of character. (4) The abolition of the canteen feature of the post exchange. (5) The want of a military penitentiary for general prisoners now confined in post guard-houses.

That the discipline of the entire army, officers and enlisted men will surely improve under the well-tried methods of ante-bellum days goes without saying. The weeding out of immoral and incompetent officers should rigorously continue; increased care should be taken in the selection of recruits; and special effort should be made to secure an increase of pay for our non-commissioned officers, for on them more than on any other personal factor, depends an improvement in discipline.

While it is a fact that in dollars and cents our army is probably the best paid in the world, it must ever be remembered that pay is entirely relative, and that the purchasing power of a dollar in our country is barely 25 per cent. of its purchasing power abroad. Next to the restoration of the canteen no other factor would, perhaps, affect discipline so favorably.

In seeking to check the evil of desertion it would seem as though the army had reached the superior limit of improving the soldier's condition and surroundings; further efforts should work along severer lines. Deserters should, in all cases, serve sentence in a military penitentiary, and the States should enact legislation disfranchising all deserters from participation

in State elections, until they have made good the time lost by desertion.*

Military Education.—With the resumption of peace conditions came opportunity for theoretical instruction of officers, which had been necessarily laid aside during the continuance of almost constant field-service. A graded system of military education has been drawn up and put in operation by the General Staff, and while the pressure of work for both students and instructors has undoubtedly been quite severe, the effect of regular study has been entirely wholesome and the results far reaching.

The qualifications for proficiency in the studies of the garrison schools have not been placed so high, but that in a few years we may expect all subaltern officers to have become proficient. At the same time, many young officers' ambition has been stimulated, and for these is provided a progressive course in the Infantry and Cavalry or the Artillery Schools, the Staff College and the War College. As collateral schools of instruction we also have the Engineer School, the School of Application of Cavalry and Field Artillery, the Army Medical School, and the School of Submarine Defense.

Coast Defense.—Under the corps organization which has been given it, the coast artillery has made excellent progress in the knowledge and use of the heavy guns provided on the recommendation of the Endicott Board. At the present time about one-half of the contemplated armament has been mounted.

According to the most recent report of the Chief of Artillery, the present personnel of the coast artillery is not sufficient to man and serve one-half the guns already mounted. Five thousand additional artillerymen are also considered necessary for torpedo defense. A conservative estimate of the number necessary for one relief of the completed fortifications would, therefore, amount to from 75,000 to 85,000 men; and for the three reliefs which the artillery claim as necessary for efficiency, three times that number.

No one can doubt but that under suitable regulations a sufficient force of local militia may be secured to provide for the second and third reliefs in time of war. But one can very easily doubt whether the Endicott Board ever contemplated giving the coast artillery a peace strength greater than all the other arms combined. It would seem that the question of the mo-

*See Annual Report of the Chief of Staff for 1904.

ment is the provision of a proper system of submarine defense, and the completion and proper equipment of the forts already constructed with suitable range-finding instruments before going on with the construction of additional gun-emplacements and the mounting of guns. The future holds out immense possibilities in prospective improvements within the decade of submarines, dirigible torpedoes and even air-ships.

Training.—Two very significant and important features in the practical training of officers and men have marked the return of the army to peace conditions.

The first is the revival of interest in target-practice under better conditions than have ever before existed. The immense advantage of having an army of marksmen was very apparent to us in our war with Spain, and was made even more conclusive by the experience of the British in South Africa.

Our firing regulations have been rewritten to conform to the latest requirements of field-service; expert riflemen now receive an increase of pay, and a friendly competition has for several years been an annual event between the Army, Navy, Marine Corps, and National Guard of the several States.

Under the patronage of the National Committee for the Promotion of Rifle Practice, legislation has been introduced in Congress, providing that a million dollars be appropriated annually for training in rifle practice such citizens belonging to rifle clubs, as desire to become efficient marksmen, for proper shooting galleries, for national target-ranges, and for the issue by the Government to schools and clubs of rifles and ammunition for target-practice. The bill further provides that the names of persons qualifying as marksmen are to be filed in the office of the Military Secretary. Additional legislation is also under way to give increased pay to such soldiers of the army as may qualify as marksmen, sharpshooters, or experts.

It cannot be doubted that if Congress enacts this legislation, an impetus will be given to target-practice in our country that it never had before. The native American has ever had an inborn taste and love for good marksmanship, and proper encouragement is all that is needed to provide the country with an army of sharpshooters.

The second significant feature of the peace period has been the wide-spread interest in field exercises, and the joint partici-

pation in army maneuvers of the Regular Army and the organized militia.

Maneuvers have been held at Fort Riley, West Point (Kentucky), American Lake (Washington), Atascadero (California), and Manassas (Virginia); the State of Ohio mobilized an entire division of its National Guard and held successful maneuvers at Athens; and the army and navy, during the years 1902 and 1903, participated in joint maneuvers off the Atlantic coast.

The effect of this practical work in the field has been highly beneficial to both regulars and militia, to officers and enlisted men, and has more than offset the continued theoretical work of the officers during the past two years. It has been especially advantageous in giving superior officers opportunities to exercise command over such tactical units as they might command in war. Captains have commanded battalions; majors and lieutenant-colonels have commanded regiments, and colonels brigades. The solution of tactical problems was in many cases a practical and convincing test of our officers' ability to exercise command, and the intense realism with which all entered into the war game, was as gratifying as it was valuable.

Our maneuvers of the past few years would seem to have given us the following requirements as best suited for future field exercises of this character:

1. For the present, participation in maneuvers of no greater tactical units than one division opposing another division—each division possessing the necessary divisional cavalry and field-artillery.

2. For maneuvers in which the militia participate, elementary problems at first, progressive in character.

3. Rest days between maneuver days, devoted to lectures and discussions by officers, and instruction of the enlisted men, in hasty entrenchments, first aid, and the like.

4. Participation by the militia of each State for a period not less than ten days; the regular troops to remain in camp at least twenty days, and participate in two sets of joint maneuvers with the militia.

5. Change of location of the maneuvers each year, or alternate years, to new and unknown terrain.

6. General officers to render special efficiency reports at the completion of the maneuvers, on all officers above the grade of captain, who have exercised command, with a view to the re-

tirement of those who, in repeated maneuvers, demonstrate their inefficiency from either physical or mental defects.

7. New legislation giving the commanding general of maneuver camps military authority over all militia participating. At present, no such control exists.

The Militia.—Some description of the Act of Congress of January 21, 1903, to promote the efficiency of the militia has already been given, as well as some mention of defects in the law requiring remedial legislation. It remains to speak of the effect of the law on the organized militia during the past year.

In the matter of rearmament, each State and Territory has received sufficient United States magazine rifles and carbines to completely arm the militia, together with a suitable amount of small caliber ammunition. The manufacture of the new 3-inch field-guns, with which it is contemplated arming twenty-six field-batteries of militia, is progressing satisfactorily, and the guns will probably be ready for issue late in the year 1905.

The reports of the special inspections of the militia by Regular Army officers, which fixes their right to a share of the allotment under the law, showed a marked improvement in general efficiency, and resulted in the disbandment and muster-out of many companies which could be dispensed with. Of the 8479 officers and 106,787 men of the militia, 82 per cent. of the officers and 78 per cent. of the men were present at inspection; encampments had been held in thirty-one States and Territories in addition to participation in the army maneuvers already referred to; and the Military Secretary has estimated that about 75 per cent. of the entire strength would respond to a call for service under the Federal government. The total strength of the organized militia on October 1st of the present year (1904), was 115,937 officers and men. Under that section of the militia law which permits militia officers to attend army schools, thirty-three militia officers are undergoing instruction; twenty at garrison schools, four at the Infantry and Cavalry School, one at the Artillery School, and eight at the Army Medical School. The Government has made provision for a maximum of 208 militia officers at army posts, and it is believed that a much greater number of officers will avail themselves of the instruction next year.

As to the working of that section of the militia law which provides for the enrollment of officers for a future volunteer force, it is significant that only thirty-four applications were

received from the several States. It seems imperative that legislation be enacted as soon as practicable, providing for a national volunteer reserve. Not until then will qualified officers present themselves in sufficient numbers to assure the enrollment called for under the law.

CONCLUSION.

Looking back on the many stirring experiences of our army during the past six years, history records many grave mistakes of omission and commission—many, to our shame, that were but useless repetitions of similar blunders during the great Civil War. The question naturally arises, has the Government really profited by these experiences, and does it at last appreciate the Nation's military weaknesses and necessities? If war were declared to-morrow, would the people, with a perversity unworthy of our boasted intelligence, still cling to the false theories of the past?

We shall hope not, and at the same time we must confess that our hope is tinged with a shadow of doubt. The national memory is a short memory, when it deals with national weaknesses that are past. We are vain of our phenomenal prosperity, our readiness of resource; and the historians of our past wars love to dwell on the Nation's greatness in rising superior to every obstacle, in triumphing over almost insuperable difficulties. But the national conscience fails to respond to reminders of the useless blunders that sent thousands of gallant soldiers to their death. We are wont to be charitable, and to charge all our failures to profit and loss.

Let us not ignore the lessons of the past, purchased at the cost of so many lives and so much treasure. Such a terrible mistake in 1870 gave France a humiliation from which she is even now suffering, and more recently shook the prestige of the great British Empire.

We have at a bound taken our true place among the great nations of the earth, and are now reckoned among the arbiters of the world's peace. With increased prestige has also come a thousand new and complex responsibilities which will continue to increase with the years. Let us remember that "*Peace is enervating, and no man is wise enough to foretell when soldiers may be in demand again.*"

LINES OF INFORMATION. THEIR DEVELOPMENT AND THEIR VALUE TO STRATEGY AND TACTICS.*

By Brigadier General A. W. GREELY, Chief Signal Officer.

PRESIDENT ROOSEVELT, at the beginning of a military epoch in America—the dedication of the War College—tersely and pertinently outlined the precarious tenure of peace conditions to-day in the statement that an opulent, aggressive and unarmed nation invites humiliation and disaster. He wisely added:

> The army will do well in war merely in proportion as it has been prepared well in peace. Defeat will come inevitably if the preparation is put off until the war begins, and victory will come if it has been prepared for in time of peace, and on no other terms.

The truths thus forcefully enunciated to the country by the President must be apparent to every student of military history.

Perhaps the preparatory methods for an efficient state of national defense have never been better formulated than a quarter of a century since, by a Belgian officer, Major Renard, in his "*Cours Abrégé de Tactique Générale.*" He says:

> The nation which neglects its staff; which does not apply itself to the constant improvement of its military establishment; which does not keep pace with scientific progress as regards its armament, the instruction of its troops, and the recruitment of its officers; the nation committed to such policy advances to future disasters, and prepares itself for most bitter humiliations.

As regards the American Army, its methods of promoting efficiency are now superior to those of any preceding period. A general staff, carefully selected and duly organized, has entered on its novel services with zeal and energy; if the scope and character of its duties are somewhat vague and indefinite, it must be borne in mind that evolutionary methods are necessarily tentative. Previsionary efforts are lacking in no department for the application of current industrial inventions to military purposes. Military instruction has been co-ordinated and improved to an unprecedented extent, and it is believed that any slight deficiencies in theoretical training, which

*Read at a General Meeting, Military Service Institution, Governor's Island, N. Y. H. Jan. 11, 1905.

time and experience may develop, will be promptly remedied by the general staff. Our military academy furnishes graduates of the highest military and manly types, while the few remaining commissions are conferred under sound legislation and by wise executive action.

The constant improvement of any military establishment is, however, a problem of infinite difficulty. Among the most intricate factors are those connected with the timely modification of tactics, organizations and appliances, so that under changed conditions the greatest benefits may accrue from modern inventions and advances.

Let us consider the transmission of military intelligence, which in this paper is designated as Lines of Information, a problem that has lately forced itself to the front, although practically ignored by current military authors as to its more important phases. The way should be cleared by a few definitions.

Strategy is the art of so directing an army as to force the enemy to abandon his campaign and field operations, or to compel battle under the most favorable conditions with reference to numbers, situation and subsequent advantages.

Tactics is the art of directing the movement of troops in campaign so as to best utilize special qualities of troops, advantages of terrain, means of communication, and lines of information.

Of information the German writer, Clausewitz, says:

> By the word information we denote all the knowledge we have of the enemy and his country; therefore, in fact, the foundation of all our ideas and actions.

Schellendorf says:

> Means of rapidly sending information should be provided.

James considers as one of the most important modifications in modern war:

> The greater speed with which intelligence is obtained.

In this paper information also includes all knowledge of one's own troops and country essential for administrative, strategic and tactical purposes.

It should be further understood that the compiling, distributing, filing, indexing and digesting of information are viewed as functions of the General Staff and not included, save

incidentally, in Lines of Information. The operation of such lines covers all methods for the transmission of military information to and from the entire army, and the interference with similar operations by the enemy, whether direct or indirect.

Lines of Information then cover the exercise of telegraphic censorship; the general control of military mails; the construction, operation and maintenance of telegraphic lines—flying and semi-permanent; visual signaling—flag, lantern, bombs, heliographs, Ardois flashlight, etc.; the preparation of preconcerted signals; the coding and translation of ciphers; ballooning and military aerostation; the use of carrier pigeons, etc.; the interception and translation of the enemy's military information; the application of wireless telegraphy; the laying and operation of submarine cables; the institution of telephonic lines and exchanges—field and camp; the fire control and direction systems for coast defenses and for co-operation with naval forces; and the establishment of special telegraphic and cable circuits (commercial and military lines combined) for intercommunication with naval or military forces operating abroad.

The indispensability of military intelligence has been set forth by all modern writers on war, and no statements are necessary on this point. The value attached to its speedy transmission, is, however, set forth briefly by citations from competent authorities.

Lewal says:

> To obtain information signifies nothing intrinsically; it is its transmission in seasonable time which permits its utilization and imparts its value.
>
> As situations rapidly change, it is important to furnish useful information with the greatest rapidity.
>
> Transmission should be uninterrupted and without delay, for frequency and rapidity are essential elements of information.

The British authority, Colonel Furse, in "Information in War; its Acquisition and Transmission," gives scant attention to transmission of information during field operations, though dwelling fully on methods during sieges. As to its indispensability he says:

> The success of important operations mainly depends on the rapid transmission of orders and information in war.
>
> The neglect of important means for rapidly transmitting information can only rob a commander of many favorable opportunities for gaining important advantages, if not securing his troops from destruction.

While admitting that there is no "valuable instruction on this duty for the guidance of all concerned," Furse discredits telegraphy for cavalry divisions, considers visual signaling of rare adaptability, and falls back on couriers, light vehicles and especially cyclists. As an ideal situation he adds:

> Where a special Telegraph Corps is formed, this might unite all means for a rapid transmission of information.

Quoting from May, "Imperial Defence":

> Intelligence in war is the first requisite to successful strategy. Without means of communicating information, the labor of collecting it is vain. Early intelligence in naval warfare is as valuable as a reenforcement of many ships. Rapid cable laying in time of war is a problem of imperial defense of the first importance.

American writers are silent on this subject, though Wagner, in his excellent "Organization and Tactics" was first to suggest an adequate organization. Presumably, and wisely, he considers it a technical subject demanding special treatment.*

The modern development of Lines of Information and their evolutionary application to strategy and tactics, will now be considered. The Crimean War of 1854 and the Italian struggle of 1859, while suggesting possibilities, scarcely offer examples of realization.

The American Civil War, so prolific in the application of modern science to the art of war, exploited lines and methods of information to a hitherto unprecedented extent. Ballooning, visual signaling, aerial and submarine telegraphy, supplemented, extended and replaced, according to circumstances, the ordinary means of scouts and couriers.

The importance of the work and the necessity of co-ordination were inadequately recognized, and the three methods, now consolidated in the American Army, were operated by three unrelated and unharmonious organizations, each viewing the others as rivals.

The great tactical value of visual signals was evident at Yorktown, in connection with the balloon; at Malvern Hill in directing the fire of the co-operating gun-boats and at Fort Fisher during actual assault in changing the fire of the navy from traverse to traverse, as the Union forces gained ground.

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*NOTE.—Several years since, however, it was set forth in my annual report, that "A competent general views visual and electrical signaling as indispensable to the success of important strategical operations, wherein complete control of separate and co-ordinate commands is necessary.

The flanking movement of Lee for the earliest invasion of Maryland was first reported from a signal station. At Gettysburg the visual signal stations were potent factors in tactical movements at critical periods. It was a signal message from Kenesaw Mountain to Allatoona that ensured the safety of Sherman's supplies, and permitted pursuance of his campaign.

It is needless to say in this electrical age, that the military telegraph was the most valuable of the three branches, and that, while almost entirely used in the early war for administrative purposes, it was gradually applied to logistics and strategy, from pure force of circumstances in some cases, and from the military genius of the commanders in others.

Patterson was unprovided with electric means of communication, and his report of Johnston's march to reinforce Beauregard reached the War Department so late that the first battle of Bull Run was untimely fought.

In 1862, McClellan, in addition to utilizing balloons, was the first general to apply the military telegraph to systematic tactical purposes in war. On June 21, 1862, at Gaines Mill, was opened a telegraph office, practically on the line of battle, for the purpose of receiving information and transmitting orders, doubtless the first time in actual conflict. It must be admitted, however, that the full value of military telegraphy was not fully realized, since the army of the Potomac at Harrison Landing was for a month, seventy miles distant from its base of military information, the telegraph station at Jamestown Landing. It is notable also that Meade fought Gettysburg without any telegraphic base of informaton, depending on visual signals and couriers.

Grant, likewise, was without telegraphic facilities between his headquarters and Pittsburg Landing, and was at a disadvantage during the battle af Shiloh. With his great inherent military ability, Grant profited by experience, and throughout his later western campaigns was invariably connected by electric lines with all bases of information, and utilized them to great advantage. When Grant became commander-in-chief, first of all great generals, he applied Lines of Information not only to battle tactics but to strategy in its widest sense. Establishing his headquarters with Meade's army in Virginia, in May, 1864, he daily received telegraphic reports from the commanders, and gave orders regarding the operations of Meade in Virginia, Banks in Louisiana, Sherman in Tennessee, Butler

in Virginia and Sigel in West Virginia. Later there was under his direct control a military force of more than half a million soldiers, operating over a territory of 800,000 square miles in extent. It was these Lines of Information that rendered possible that strategy of Grant's, which, through concerted action and timely movements, shortened the duration of the Civil War, by preventing the reenforcement of Lee's army in Virginia.

Sherman's quickness in saving his base of supplies at Altoona by the conjoined use of the telegraph and visual signaling, has been mentioned. Had his Lines of Information failed at that juncture, the results would have been most unfortunate for his army and the country.

In connection with the general question, Sherman says:

> The value of the telegraph in war cannot be exaggerated as was illustrated by the perfect concord of action of the armies of Virginia and Georgia in 1864.

It is thought that few realize the extended operations of military telegraphy in the Civil War, during which there were constructed and operated no less than 15,389 miles of land lines and cables. It is not necessary to further dilate on the practical value to strategy and tactics of the American Lines of Information during the war in question. However, many lessons of this great conflict failed to fully impress the military world at large, which, in many instances, looked with contempt, not unmixed with ignorance, upon the operations of the American Armies.

The Franco-Prussian War of 1870 wonderfully stimulated military criticism and research. It is therefore profitable to consider briefly the literature of the following decades on Lines of Information, and the application of such theories to various armies.

Hamley, pointing out the constant use by Sherman of telegraphs in his flanking operations in Georgia, indicates the overwhelming value of field telegraphs in enabling a general to impart unity of time and purpose, during decisive and co-operating movements along an extended front.

In 1876, General Simmons, in urging on the British Parliament an increase and reorganization of military telegraphs, testified that: "Not even the smallest war could be carried on successfully without them."

Wolesley forecasts very great advantages in actual battle to the general of

> The nation and army that shall be the first to thoroughly work out and apply a sound system of telegraphy as an aid in all tactical combinations.

Despite such sound advice Great Britain long failed to perfect its system, which remained a makeshift organization with scattered duties and limited functions. In 1892, it had on a war footing, only one telegraph battalion for the two army corps. Its limitation of functions is shown by an extract from its official "Manual of Telegraphy," 1897.

> It is probable that in future campaigns, the telephone may be utilized also as a means of communication.

Its inadequate material was instanced by its telegraph lines stopping at Dongola on the Nile for lack of river cable. While its telegraph service has trained enlisted men, its officers are temporary, serving by detail from the Royal Engineers. It was the versatility and skill of such officers, however, that produced notable results in Ashantee, the Soudan and especially in South Africa, where greater facilities were afforded than ever before.

Germany has been always alive to this subject, although Schellendorf indicates the limited application twenty years since:

> Field telegraph detachments are intended to keep up telegraphic communication between the headquarters of armies and other independent commands and the headquarters of the commander-in-chief; or between several armies or army corps carrying on active operations.

The Germans established a telegraph system in 1859, which was promptly reorganized as soon as the application of telegraphy was notably effective in our Civil War. In its war with France it utilized the military telegraph to a modest extent, having less than one hundred field officers and about 1600 miles of line. As a rule, only the general and corps headquarters were connected. Doubtless captured permanent French lines subserved German purposes and obviated the necessity of a very extended field system.

Significant and important extensions have been lately made. In 1899 was established a separate corps, "Troops of Communication," composed of one balloon, three railways and

seven telegraph companies, commanded by a major-general under the emperor directly. Its insufficiency for the twenty-three army corps soon became obvious. In 1901 action was taken to supplement this force by a system of regimental details, under which selected officers and men are instructed by the permanent force for a year.*

The application of field telegraphy to war was initiated by Spain, in Morocco, 1859. The late extension of visual signaling and the increase of the battalion to a regiment of telegraphers indicates Spain's present policy.

Russia has long realized the indispensability of telegraphs to success in war. Its armies strung in the Balkan Campaign, 1580 miles of wire, and in the Asiatic Campaign about 1800 miles. In Armenia, 1877, the Turks ignored telegraphic facilities, while the Russian commander through his Lines of Information not only rescued Lazaref's army from an apparently fatal situation, but also arranged and directed by telegraph the combined operations which destroyed the Turkish Army under Mukhtar.

Though France was early in applying electrical communications to war in the Crimea, Algeria and Italy, its system failed under the strain of war in 1870. The necessity of thorough technical training, consolidation and co-ordination, was emphasized in the report of the Fifth Commission to the National Assembly in 1871. Of the war service Baron Eschasseriaux says:

Our telegraph service exhausted itself in efforts frequently sterile to accomplish results with the inadequate means furnished it.

By all means the most forceful and far-seeing writer on this subject is General Lewal whose "*Études de Guerre*" are among the most thoughtful and comprehensive, especially as to practical details, of any modern essays that have come under my notice. Lewal's studies on military information, extending from 1860 to 1882, form two volumes, "*Tactique des Renseignements*. Brief extracts indicate the tenor of his conclusions:

Information service fails especially because the world is ignorant of its principles, processes and mode of action.

The transmission of intelligence demands special organs.

The knotty problem is to opportunely deliver information to the commander who awaits it to make his decisions, and to issue appropriate orders or warnings to distant units.

*NOTE.—As this paper goes to press it is announced that the German budget of this year provides for an additional telegraph battalion.

Transmission is the more important as distances increase and obstacles augment.

Visionaries have often affirmed the necessity of uninterrupted relations between the elements of any army without indicating the possibilities and methods of their realization. Communication by wire is the most complete method when it is available.

Most armies give some telegraphic training to non-commissioned officers and troopers; it is lost time. Those partly informed are always incompetent; specially trained men are necessary.

For outposts, advance guards or investments, the field telegraph or telephone can be advantageously employed. They become impracticable for great distances. The laying of the line is impossible under conditions of rapidity and distance, which are involved in exploration by cavalry, or even by infantry.*

Line repairs can be completed; creations, no.

As situations rapidly change, it is important to furnish useful information with great rapidity, and especially to be able to question observers and call their attention to essential things. The electric telegraph fulfills perfectly the purpose, but it can only be employed very exceptionally.

Of flying telegraph lines, Lewal adds:

Known systems are complicated, costly, very heavy, and do not produce desired results. Inventors will doubtless solve this problem practically, but such a system does not exist to-day.

Of the telephone, which gave great promise originally, he says:

Extensive use is impracticable; nevertheless, with relays and the prospective perfection of the telephone, it will not always be impossible to unite the main part of the grand guard to the commander of the regiment to which it belongs; the support to the numbered posts of the grand guard, these to picket posts, and these last to the signalists. Numerous attempts by different nations have resulted in numerous difficulties.

Scientific progress will doubtless afford a practical solution. Whatever this may be, the telegraph and telephone always have disadvantages of fragility and slowness of installation. Save in rare cases electrical and telephonic relations with advanced posts cannot exist.

The most profitable method will consist in a combination by prolonged electric lines to the end of the visual lines which penetrate to all desirable points. This thoroughly indicates the propriety of having only one personnel provided with all intelligence necessary to operate it.

It is to be added that military writers of the past twenty years have failed to seriously consider this subject. Derrecagaix, "Modern War", 1884; Gall, "Modern Tactics", 1897; James, "Modern Strategy," 1903; Maguire-Tovey, "Elements of

*NOTE.—This and several similar extacts illustrate, by comparison with accomplished results, the great success of the military experts of to-day in completely solving electrical problems of field transmission, which were impracticable twenty years ago.

Strategy" 1903; Baden-Powell, "War in Practice", 1903, and many others barely allude to means of rapid transmission.

The soldier has not waited on the essayist. Although adhering to the pernicious system of half-trained details and providing an inadequate skilled personnel, yet every European army recognizes by its steadily augmenting organizations, that Lines of Information are potent and indispensable factors in tactical and strategical operations.

The only standard authors, Lewal and Furse, advise coordination of Lines of Information under one command, as was done in Germany, 1901, and in the United States, 1891.

In the American Army the permanent force was absurdly small, being but two men to the thousand in 1897 for the technical duties, electrical, balloon, etc., while not less than fifty-seven per thousand were detailed for visual work. Material was similarly inadequate. The permanent force was very highly trained, and formed an effective cadre for the greatly augmented force of 1898. It is now nineteen to the thousand, practically two per centum.

Lines of Information are no longer ideal and experimental, for their practical operation is the story of the field duties of the American Signal Corps for six years past, in China, Cuba, Porto Rico, and the Philippines. Its work placed McKinley within five minutes of the south coast of Cuba. It first located Cevera's fleet, and first announced its destruction. At Santiago it stretched telephone wires along Shafter's front from San Juan Hill to Aguadores, reconnoitered Spanish roads from a balloon on the skirmish line, and directed Sampson's fire on the besieged city. In Porto Rico it opened up cables; and the telephones and sounders of its electric lines, keeping pace with every division, were in the forefront under fire. In China it followed Chaffee's columns, and, entering Pekin on the heels of his victorious troops, kept alone the world in touch with the imperial city for a week. It repaired Dewey's cable at Cavite; and directed the fire of the Monadnock at La Loma. In the Philippines its 10,000 miles of constructed and maintained telegraph lines and cables connected all tactical points throughout the entire archipelago, whether in the field or camp, under fire or in quiet intervals; not only did its campaign work shorten the insurrection, but also its existence later rendered possible great reductions of forces without endangering peace, more than once saving a garrison.

Of its services, the investigating Commission of the Conduct of the War with Spain, reported:

> The chief signal officer and the officers and men under his command were equal to every emergency, and the work was so quickly and successfully done that there has not been a complaint filed from any source. . . . The services of the signal corps during time of war have become of inestimable value.

Of its work in the Philippines, Lieutenant-General Chaffee said:

> The telegraph is a very potent factor in contributing toward the maintenance of peace and order.

Major-General MacArthur, after declaring that it more than doubled the efficiency of his widely scattered command, adds:

> Wire service simplifies everything, makes unity of action possible, insures concentration of troops on threatened points, and altogether is of such importance that it is impossible to say too much in its behalf.

Brig.-Gen. J. Franklin Bell, with reference to his campaign in Southern Luzon, says:

> Had it not been for the exceptionably valuable service rendered by the signal corps, I feel certain that I could not have accomplished in six months what has already been accomplished in six weeks.

Nor have Lines of Information been operated with efficiency in the American Army alone. In the Asiatic War, the operation by Japan of such lines, whether in transmitting known information or in suppressing that of value to the enemy, has been conducted with a skill and on a scale hitherto unsurpassed, even if equaled.

Mr. Frederick W. Palmer, in his graphic book, "With Kuroki in Manchuria," repeatedly notes the value and frequency of Japan's operations as to censorship, telegraphy, telephony, ballooning, and visual signals. To quote briefly, from many instances, Palmer says:

> The Japanese method of keeping their secrets from outside communication was simple and drastic. For a week before the battle Korea was sealed. No telegrams, no letters were allowed to depart.
>
> The sound that interested Kuroki most was not that of firing, but the click of the telegraph instrument, which left nothing to the doubt of vision, but told him exactly what each unit was doing.
>
> Meanwhile, the Japanese general—he of a race that only a half century ago fought with swords in battles where the leader must lead with his own fencing arm—sat in safety, his staff around him, in touch with all his units, remedying errors and meeting situations as they

appeared. But this general had taken over the formulæ from the latest school—Von Moltke's—and applied them.

We were isolated (Kuroki's flanking movement at Liao-Yang). The staff gave the order to retreat. But no sooner were the orders for the Twelfth Corps to fall back received over the wires, than communication with grand headquarters (cut off shortly before) was resumed.

On the reverse side of the hill of Kwantun (before Liao-Yang), the telegraphers and the field-telephone men were always busy bringing news from our divisions, our brigades, our regiments, our batteries and most important of all, from Oyama. Upon the span of wire through the cornfields depended the staff knowledge of the position of our own corps and all the work of other corps which affected our own. When the key could sound for grand headquarters and no answer came, the position would be that of a battleship in evolution whose rudder had refused to respond. If the telegraph commands a mobility of organization on a large scale impossible in Napoleon's time, no chief of staff can quite forget that the execution of his plans hangs by a thin thread of copper.

Time fails for even a general consideration of the various Lines of Information, but a few suggestions are advanced regarding field telegraphs for an army in campaign. These opinions are the outgrowth of an extended experience in telegraph construction and maintenance in many parts of the world, involving more than 20,000 miles of land lines, submarine cables and wireless sections, of which 15,000 were installed under war conditions in foreign countries.

Army and corps headquarters should be connected with the base of operations by permanent trunk lines, which should carry at least two wires and an additional wire for each 10,000 troops. Angular lines are more useful than strictly perpendicular lines, affording quicker transmission by courier to and from troops unprovided with wire facilities.

The trunk line to general headquarters preferably follows a railroad or the main highway, thus insuring comparative freedom from hostile interruption and quick repair. In a large army the corps on the extreme flanks should be reached direct from the base over separate roads. These separate main lines should be bisected by a lateral line at road junctions, etc., thus providing alternate routes—a matter of vital importance for insuring uninterrupted circuits. Telegraph offices should be maintained at suitable points, intersecting roads, etc., not more than ten miles apart on trunk lines, or five miles on temporary lines, manned with operators and repairmen. A mounted force should constantly patrol such sections as are indispensable for general tactical movements.

Branch lines, permanent or temporary, as circumstances dictate, should be run from corps heaquarters to divisions, to brigades and to any smaller unit occupying an important position. While the corps systems should be operated independently, they should not only be under general control of the chief signal officer of the army, but should also have their circuits so arranged that the commanding general can be directly connected by wire with any command. Trunk and branch lines should be built and operated with standard material and instruments. Selected officers should, however, be additionally provided with special field sets, so that communication in emergency can be had by either telegraph, telephone or buzzer.

Flying lines should connect designated offices, on the trunk or branch lines, with every tactically important point in front or flank, whether it be a picket, outpost, supporting party, a battery, regiment or detached command, and whether in action or support. Reconnaissances of importance should be similarly kept in electric touch with the main army. Flying lines should be entirely operated by field instruments, which work either sounders, telephones or buzzers.

Telephone systems for administrative purposes should be, wherever possible, separate from the telegraph.

Flying lines of No. 18 or larger wire, should be carried by lances, wherever other supports are unavailable. Lighter wire, whether bare or insulated should for temporary and rapid installation, be thrown on shrubbery outside the traveled road. River and road crossings require light cables or strong steel wire for spans.

Lateral lines, parallel with the army's front, for general purposes are most inadvisable. Branch lateral lines may, however, be established along a front protected by entrenchments. Lateral flying lines should be the shortest possible, simply connecting the flanks of several commands or contiguous outposts and pickets.

Every telegraph system should be supplemented by visual signal stations for both day and night work.

In conclusion, it is pointed out that two nations, Germany and the United States, in co-ordinating their systems of military education, have recognized the primary importance of these Lines of Information.

In Germany, the War College was supplemented in 1903 by the Technical Military Academy, in which one of the three

courses is devoted to communications. In urging the establishment of this academy, the report says:

> The constant progress of science places at the disposal of military art new means of indisputable value. Without the aid of such resources it will be impossible to provide for the needs of, or to properly maneuver great armies. * * *
>
> This necessity is especially evident when we pass to the application of electricity and optics. Specialized study is necessary to determine appropriate means and suitable methods for war, where conditions differ so materially from those of peace.

The General Staff of our army in formulating our military education has wisely instituted similar special schools, and the value of Lines of Information has thus received its first official recognition. The Signal School to be opened this year at Fort Leavenworth, includes in its courses signal engineering, and specifically provides for instruction in the dissemination of information.

It is unquestioned that the changed conditions of modern war henceforth involve deeper formations, flanking attacks, widely extended fronts, and enlarged areas of field operations. These imply for all armies in the future, steadily increasing Lines of Information, of which, during the past six years practical and brilliant applications in battle and campaign have been afforded, first by the American Army, and later by the British, Japanese and probably Russian forces.

It is perhaps not too much to claim that the energy and resourcefulness of the American Army initiated a new epoch in Lines of Information, when in the war with Spain it applied electricity to military uses on a scale and with a success hitherto unprecedented.



OUR NEW INFANTRY DRILL REGULATIONS.

By Lieut.-Col. CHARLES J. CRANE, Eighth Infantry.

THE battalion at this post has drilled according to the new system from the very beginning of the book to the end of the school of the battalion, excepting some of the formations for attack and defense, and the officers have studied and recited every page of the text.

The writer was instructor, both in the school-room and on the drill ground.

Some of the more important changes from the old system will be noted in the following remarks. It is believed that a little too much expedition was used in getting the book ready for use, and it is more than likely that the result will be a host of requests for interpretation of certain paragraphs not clearly understood.

One must keep well in mind the previous lessons, for instance, paragraph 23 must be remembered and followed in handling a battalion in line of squads and in line of skirmishers.

But once well learned, it is believed that the arrangement of the text will be satisfactory. Many valuable general principles have been added, relating especially to extended order movements, but it is hoped that in the very first revision that old excuse for lazy and indifferent drilling will be omitted.

Reference is here made to that old provision taken from previous drill regulations, to the effect that "the posts of the officers and non-commissioned officers are specified, but as instructors they go wherever their presence is necessary".

The posts given the instructor by the text are almost invariably the best for him as instructor, for from such posts almost invariably he can best observe the manner in which the men execute the movement, and seeing the errors committed, can best understand how to apply the remedy. Otherwise the same mistakes may be repeated to the end and may never be corrected by that particular instructor.

The writer has devoted unusual attention and study to this particular point, and freely states his belief that no other provision in our drill books has caused so much bad drilling, because of the excuse it has given the perfunctory instructor

to take his ease. In the setting up exercises the pruning knife has been used freely, but not freely enough.

It is not believed that the old balance step ever did any good, and the old double step should have remained in the seventeenth century where it belonged. These are now the 4th and 5th exercises.

If the addition of a word or two will prevent honest difference of opinion, and thus avoid requests for interpretation on certain points, it would seem that the additional explanation should be given. In paragraph 50, the addition of the word "while" after "right about" and before "taking four steps in place" would leave no doubt in any reader's mind as to the meaning of the text, which without it is a trifle obscure. Similarly, many do not know whether or not "In place, Halt", paragraph 13, includes execution of order arms.

In the "Manual of Arms" we find the "left shoulder arms" and the various combinations entailed by it.

It is easy enough to execute, but the need for any such addition is not seen by the writer who, however, appreciates each change toward having uniformity in the Manual, and believes in no slipshod performance of it. He moreover believes in a simpler manual.

In the different schools there is gradual progress, the soldier being instructed early in extended order movements, and this method is undoubtedly wise. Paragraphs 116 and 117 give us the greatest surprise contained in any part of the book.

We have made a radical departure from the time-honored wheels on fixed and movable pivots, and have adopted in their stead the turn on fixed and moving pivots.

This change effects the greater part of all drill movements, and at first made them appear awkward and loose; but we have become accustomed to the new method and believe it will prove satisfactory.

There should, however, be no such subdivision of a company as a section. Although authorized by the last drill regulations, under certain conditions, no use was found for it.

In the loading and firing there are also changes caused by the adoption of the new rifle.

It is not believed that the majority of us will agree to the statement regarding rapid fire in paragraph 143, as fol-

lows: "This fire is used only when preparing for or resisting a charge." Neither will most of us consent to the fixing of bayonets and setting of sights at point blank every time that it is found advisable to use rapid fire.

It is believed that magazine fire should be allowed and prescribed even for troops not being charged, as when opportunity is presented to thus assist their neighbors several hundred yards distant.

On still other occasions the sudden effect of the most effective fire would undoubtedly be of great assistance, and wisely used.

And to wait till we arrive at the point prescribed for rapid fire and then waste time in fixing bayonets, seems to invite failure, and it is safe to say that with troops that are going to use their bayonet, the proper preparation for such work will be quietly done behind shelter some 500 yards distant from the enemy. In that same connection there will never be any command "charge bayonets" given when we have arrived within thirty yards from our enemy's position and are running at full speed.

The book should be consistent and not teach us one kind of charge bayonets for close order, precise, parade movements, and expect us to invent some other method in the supreme moment of a successful charge. However, the new book inherited from former systems these obsolete ideas about rapid fire and charge bayonets.

It is believed that great improvement has been made in the different schools of the soldier, squad, company, battalion, regiment and brigade, by the free use of the pruning knife, and by introducing more uniformity into the system.

The extended order drill has been most improved, and has been made more elastic and serviceable by the additions introduced.

But it is not understood how the single rank idea found expression, as set forth, in the school of the company, since we are forbidden to use it in any practical manner, or under conditions that are likely to exist anywhere except on the drill ground.

It was a mistake to ever use the word. It is also believed to be a mistake (paragraph 22) to form company in column of squads into line of squads with center or other squad remaining on the line of advance.

It is too hard to imagine a case where it would be any improvement on all the other methods given, and unless superior to all of them it has no proper place in the new book.

And it is believed that under all probable circumstances it will be found better to first form line of squads, each squad immediately deploying, than to attempt to "deploy as skirmishers from any formation".

If marching under conditions which might render such a movement advisable, would it not be better still to have the company moving along as skirmishers marching by the flank, with flankers, etc., as we did in the Philippines almost universally after really getting down to business methods over there? The text should authorize this method.

The school of the battalion is greatly improved, both close order and extended order movements, the close order drill being simpler and more uniform, and the extended order exercises being more elastic and natural.

The school of the regiment has been cut down to about the proper size and now contains no movements evidently useless.

But it is not believed that sufficient care has been used in framing the commands that are given by the colonel.

While he gives his commands mostly by word of mouth, he uses language which contains phrases having special meaning when used in the preceding schools, yet when used by him some of these commands seem unfinished and sometimes misleading in meaning.

For instance, he breaks the rule previously established and abundantly justified, and leaves out "battalions" when commanding "Halt".

On several occasions he gives the command 1. "To the rear," 2. "March", meaning for the squads to turn to the right (left) about, and not the movement explained in paragraph 50.

He designates the base battalion and commands: 1, "Forward," 2. "March".

It is firmly believed that there is no reasonably good excuse for thus violating rules previously established and satisfactorily tested. The text should continue to be consistent in the explanations, descriptions and commands used. It is difficult to reconcile the two descriptions of movements given in paragraphs 376 and 383.

Note that in forming "Column of masses to the right"

from column of squads, the companies incline to the right and the column of masses when completed faces to the left; while in forming "Line of masses to the right" the companies incline to the left and the line of masses when formed is faced to original right.

There is an inconsistency which will cause controversy whenever those two movements are discussed or executed.

The word "echelon" is used sometimes in the meaning given it in the drill movements, as in paragraph 396, and at other times in battle exercises, it is simply a line and perhaps exactly in rear of some other line or lines.

What is said about the handling of brigades and larger bodies seems about all that is needed.

In that part devoted to "ceremonies," the most striking changes are the substitution of "Eyes right, etc." for the "Port arms" in saluting the reviewing officer, and the various changes in "battalion parade".

At first they seem awkward and unnecessary changes, but having gotten accustomed to the new methods at ceremonies, they are undoubtedly improvements.

The additions about camping, pitching tents, etc., are excellent.

San Juan, P. R., December 19, 1904.



PHYSICAL PREPAREDNESS AND THE ORGANIZED MILITIA.

By Lieut.-Colonel N. S. JARVIS, National Guard, N. Y.,
Captain U. S. Army, Retired.

THE Constitution provides for "training the militia according to the discipline prescribed by Congress" (Art. I, Section 8). The statute is obscure to the present generation as it must have been to those responsible for its inception. To approximate a standard of efficiency formulated for the national forces, that is, the "Regular" Army, it is evident that much must be left to the discretion of the States, where the opportunities for training its "citizen" soldiers are necessarily limited. In fact, it is impossible under the varying conditions of civil life for the military education of the two forces to move on parallel lines for several reasons, which will be touched upon in this article. Success as a soldier is based primarily upon certain physical desiderata, which must be attained, otherwise the superstructure rests upon foundations of sand. Much has been said of the paramount need of teaching the militia soldier how "to take care of himself" in the field, and without denying for a moment that a knowledge of field-sanitation and personal hygiene will do much to arrest and mitigate sickness, yet does it not seem greater wisdom to place a primary obstacle in the way of disease by increasing the soldier's resisting powers?

Pilcher, in discussing the subject of athletic training, wisely remarks: "It is singular that while the Medical Department has devoted ample attention to the prevention of diseases by the removal of threatening conditions, it has almost entirely neglected prophylaxis, by increasing the resisting powers of the soldier himself."*

Of what factors may be asked is this power of resistance made up? Simply strong muscles, an active heart and circulation or a composed and normal nervous system. Not to any one of these essentials, but in a happy union of them all, we have a well-spring of power, by which disease is thrust aside to seek frailer and more susceptible subjects.

*Proceedings of the Association of Military Surgeons, 1894.

The Physiology of Exercise.—No attempt will be made here to offer more than a superficial review of a subject replete with disputed claims, varying experiences and questionable statistics. Certain well-grounded and generally accepted facts will be presented, however, to make clear the meaning of the discussion.

Those sufficiently interested to enter more fully into the subject are referred to such writers as MacLaren, La Grange, Sargent, Sherrington, Ling, etc.

For convenience, therefore, we will study the effects of exercise on:

(1) *The Nervous System*, which is supposed to embrace (*a*) the cerebrospinal, presiding over intellect, voluntary motion, as a rule, and the special senses. (*b*) The sympathetic or organic system, controlling the functions of nutrition, involuntary muscular movements, the mechanism of circulation, etc.

Anatomically, the latter is closely connected with the former and there is a reciprocal sympathy, both in health and disease, between the two systems.

Dr. Luys* has shown that where the function of a muscle is lost, as in paralysis, degenerative changes will be found in the gray matter of the brain, from which the impulse affecting such muscle emanates. It is reasonable to assume by analogy that an increase in the nutrition and tone of the muscles will excite corresponding changes in the nerve-centers. It is also a significant fact proven by Pflüger† that the sympathy between the nervous supply of a muscle and the muscle itself is so close that a stimulus to action passing from the periphery to the nerve-center, excites a much more powerful reaction in a healthy muscle, than in one unaccustomed to contraction; in other words, a man who works obtains much more from his muscles by a moderate stimulus than one who is inactive. Again, repeated stimuli to reaction, starting from the periphery, increase the reflex function of the spinal cord so that many complex movements are performed without the aid of the brain. This "automatism," so called, probably explains the ability on the part of veteran trained soldiers to withstand the depressing effects of continued marching, which would exhaust raw troops, whose will power is constantly taxed to meet the strain.

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*"The Brain."

† La Grange "The Physiology of Exercise."

La Grange* contends, moreover, that bodily work imparts to the man greater energy of will, constituted as a motor force, and from this change of a moral order, quite as much as that of a purely material, results what is popularly termed "physical courage." The most remarkable example of this development is seen in some of the lower animals, such as the strong-limbed bulldog and the type of man found in the prize-ring, whose power of resistance to fatigue and indifference to pain is accompanied by an energy of will and intensity of purpose almost beyond belief (La Grange). Therefore, a well-trained physique induces in man resisting powers and an insensibility to pain, friction and nervous wear, particularly desirable for the soldier—qualities not to be sought in those softened by prolonged repose and inaction.

The nearer a man approximates the purely organic life, which is the tendency in a luxurious civilization, the softer and less resisting he becomes. Moreover, it is claimed by some writers that comparative insensitiveness in the athlete is due partly to the fact that the sheath of the nerves participates in the general development of the muscular system, rendering them less susceptible to impulses of pain and shock. Physicians know by experience that the robust, muscular laborer will frequently ignore surgical procedures which would produce intense agony in a sedentary subject. The writer has, on several occasions, amputated fingers of laborers crushed by accidents, where the use of an anasthetic was unavailable and has observed very slight reaction to pain or shock.

Later we will see how profound are the sympathetic relations between the healthy and diseased nervous systems and the circulatory and digestive functions.

(2) *The Circulatory System*, embracing the blood, heart and blood-vessels, is primarily the dynamic force which vitalizes the tissues, at the same time carrying to the various excretory glands and the lungs the waste, the *débris* of the body, for oxidation or elimination in various changed forms. The part which the blood plays in the elimination of toxic materials is as important to life as its building function. After yielding up oxygen and other demands of the tissues, the blood takes in exchange products of waste, as carbonic acid, creatin, creatinin, hydrogen, sarcolactic acid, etc. The lungs, acting as filters or aerators, abstract from the blood its carbonic acid

* Idem

and other deleterious compounds and this process is in direct proportion to the quantity of blood entering the lungs; in other words, the more the waste from the muscles and other tissues, the more rapid the action of the lungs. or the greater the amount of lung space brought into action. Normal exercise, therefore, amplifies the respiratory movements in number and extent of lung space. Then during exercise there is an actual increase of blood passing through the heart and lungs calling for exaggerated aeration. These movements are ordinarily of a reflex nature, excited by the presence in the blood of some intoxicant, whose nature is not clear, acting upon the centers in the brain, which preside over respiration. When it accumulates more rapidly than the lungs can comfortably remove, the entire system is poisoned and the heart muscle participating in this is more or less disabled, its contractions enfeebled and finally decreased in number.

During exercise there is also an increase in the pressure of the blood column and more force is demanded on the part of the heart. Now it is only by the fall in blood-pressure, through reflex nervous action, that the strain upon the heart is lessened. While the left ventricle of the heart sustains largely the pressure of the blood column throughout the body, the right ventricle is strained through interference with the free aeration of the blood, either as a result of diminished expansion of the lungs, or other mechanical obstruction, to free flow.

It is claimed by some writers, Oliver, Branton, Tange, and Zuntz, and others, that the blood-pressure in athletes is *constantly low*, so that less demand is made on the heart to do its work, or it has less resistance to overcome. This lowering of resistance is due to reflex action, Nature kindly intervening to lessen the burden.

When the respirations become greatly accelerated, say, more than thirty, there is an actual decrease in oxidation. "Shallow" breathing, as it is called, does not permit the entrance of sufficient air to oxidize the venous blood. But an athlete, instinctively aware of this, learns to control the amplitude of breathing and voluntarily limits the number of respirations, retaining the air sufficiently long in the inflated lung as to insure oxidation of the blood. On the other hand, excitement exercises by its effects on the nervous system an accelerating action, prohibiting natural and free oxidation. These unfavorable elements the athlete overcomes by his training,

constituting the so-called "respiratory education." The necessity for such in soldiers is too apparent for argument.

During expiration there is always a greater or less crowding back of the venous blood, imperfect aeration and corresponding strain upon the right side of the heart. This may be so intense, as in the act of lifting heavy weights, in prolonged and rapid exercises, as to materially and permanently injure its muscular fibers. Albutt*, an English authority, reports interesting instances of the kind in young men and those of middle age, resulting from paper-chases, bicycling, etc.

Of such accidents we will speak more fully as they apply to the soldier.

(3) *The Muscular System.*—The intent of physical exercise is primarily to increase the tone, force, appearance, and proportions of the muscles, all changes expressing themselves secondarily on the system at large. As already explained, muscular contractions are accompanied by more or less waste, the effete substances being removed by oxidation or eliminated through the organs of excretion in changed forms. During contraction, the blood-vessels in the muscle are widely distended, permitting an increase of at least one-third more blood than during rest. This congestion, in itself, adds to the nutrition and functional activity of the muscle. We have also indicated that the more a muscle is brought into action the greater its susceptibility to impulses, accomplishing much more work with a slight impulse from the nerve-centers than the undeveloped muscle.

On the other hand, a muscle at rest is more or less poisoned by its own waste, comparable to a furnace clogged with clinkers, and by reason of deficient innervation it loses tone and undergoes atrophy. Again, it must be borne in mind that the overstimulated muscle may also undergo atrophy.

In considering the subject of exercise, we have in view largely the voluntary muscles, although through the close connections the involuntary muscles participate in the effects of healthy contractions. The heart, though an involuntary muscle, is an example of the developing results of exercises. The physiological effect of the muscles in increasing the processes of aeration, is of particular import to the athlete, and while muscular contractions, even in the legs, stimulate breathing, the object usually sought in "training" is to develop those

*Albutt's "System of Medicine," Vol. 6.

muscles which influence the expansion of the lungs or widen the thoracic cavity. This, at least, is of prime importance to the soldier, for by so doing his "wind" capacity is magnified and the tone and contractibility of the heart improved.

Any limitation to the greatest possible breathing, as will be explained, may not only encourage disease, but eventuate in certain well-defined and sudden accidents, crippling him at a critical moment.

Muscular activity encourages the blood flow from and to the heart, thus relieving passive congestion of the veins in the trunk and extremities, while inaction favors stagnation, expressing itself in constipation, indigestion, headache and a numberless train of similar symptoms of a functional nature. These, in turn, may become permanent from the close nervous affiliation between the atonic nerve-centers and the sympathetic nerves which pass to the various viscera.

Gautier, a French physiologist, has shown that certain products of waste termed leucomains, analogous in their effects and composition to ptomaines found in dead bodies, accumulate in overworked muscles unless promptly carried off or eliminated by oxidation. These bodies are supposed to form in animals hard driven, or greatly frightened, immediately before slaughter and is the explanation given for the unwholesome character of their meat. The wisdom of allowing animals sufficient time to permit free elimination of such waste products, is therefore clear and is one of the arguments in favor of intervals of rest for the athlete or overworked soldier.

As the bodily development is really not completed until the thirtieth year of life, it is evident there is abundant opportunity for the muscles to permanently increase the lung space by suitable training. The ribs, cartilages and other portions of the bony skeleton are sufficiently elastic to expand, and the muscles of the trunk play an important part in exercise, their effects on respiration alone considered.

As space forbids, we have purposely omitted detailed reference to the effects of exercise on the skin, kidneys and the abdominal viscera, merely emphasizing the axiom, that all the tissues are subject to sympathetic improvement in nutrition and tone, which primarily influences the heart and lungs.

DISORDERS WHICH MAY ARISE FROM DEFICIENT DEVELOPMENT.

Having briefly outlined the results of reasonable exercise, we will now review the disorders which may be averted by increasing the powers of resistance.

It may be well to render the subject clearer to lay readers at least, to class these with respect to the several systems as we have formulated them, although such a classification is somewhat arbitrary, always remembering that disease affecting any organ is prone to involve the entire economy.

Heart Strain.—The heart, as other muscles, is liable to overwork and we have explained that an overworked muscle actually loses in size, tone and consistence. The explanation is complex and a subject of much dispute among physiologists. We see a marked example in the "overtrained" athlete, who loses weight and strength. "Overtraining" is exemplified also in the jockey, whose aim is not only to harden his muscles but impose as little weight as possible on the horse.

The heart, when subjected to gradual stimulation by careful and healthy exercises, will increase in size, tone and contractibility. Technically speaking, it undergoes concentric hypertrophy and is capable of accomplishing more work. Certain desiderata, however, are necessary, such as normal valves, normal muscular fibers, healthy nervous supply, and intervals of rest.

To subject a heart, which has not been fortified by training, to great and sudden strain, so often the lot of the young soldier, may lead to helpless invalidism. We recall that the blood-pressure is always raised during exercise, which, in the athlete, is compensated for by a relaxation of the muscular walls of the vessels and an increased flow to the tissues at large. In the active and muscular, low pressure is the rule. Should the pressure be continued during severe exercise, the heart muscle subjected to a relatively great strain becomes distended or dilated, the fibers giving away, and without opportunity for recovery becomes permanently damaged.

There are two varieties of heart strain: (1) Simple irritable heart. (2) The permanently dilated heart.

The first type is not uncommon in young soldiers and is classically described by Surgeon-Major Myers, Coldstream Guards: *

*"Exercise," Quain's Dictionary of Medicine.

"The young soldier of light frame, with irritable, palpitating heart, who has broken down in his preliminary training. * * * When at rest he feels perfectly well and has little or no sensation of throbbing in his chest. So soon, however, as he puts on his tunic and accouterments and begins his drill, throbbing occurs with more or less fulness, accompanied with a feeling of oppression and with difficulty of breathing, and this being followed by a sensation of faintness, sickness or dizziness, he has to fall out of the ranks."

This variety is, fortunately, the most common and is due to the combined effects of fatigue, insomnia, excitement, and the nervous state which accompany unaccustomed exposure. It is particularly apt to be found in those whose lives are more or less sedentary, such as clerks, mill operators, students, or professional men, and is encouraged by indiscretion as to diet, alcohol or tobacco. Young soldiers, therefore, complaining of the symptoms so graphically described by Myers should be promptly relieved from all duty and placed under the most favorable conditions as to rest, food, and hygienic surroundings. As we will show by statistics, unless thus promptly cared for, this class will merge into the second or more serious type.

The second variety or permanently dilated heart, is one of the most pitiful accidents which can befall the young soldier, and particularly the civilian, who must return to his usual tasks unfitted for the burden of life.

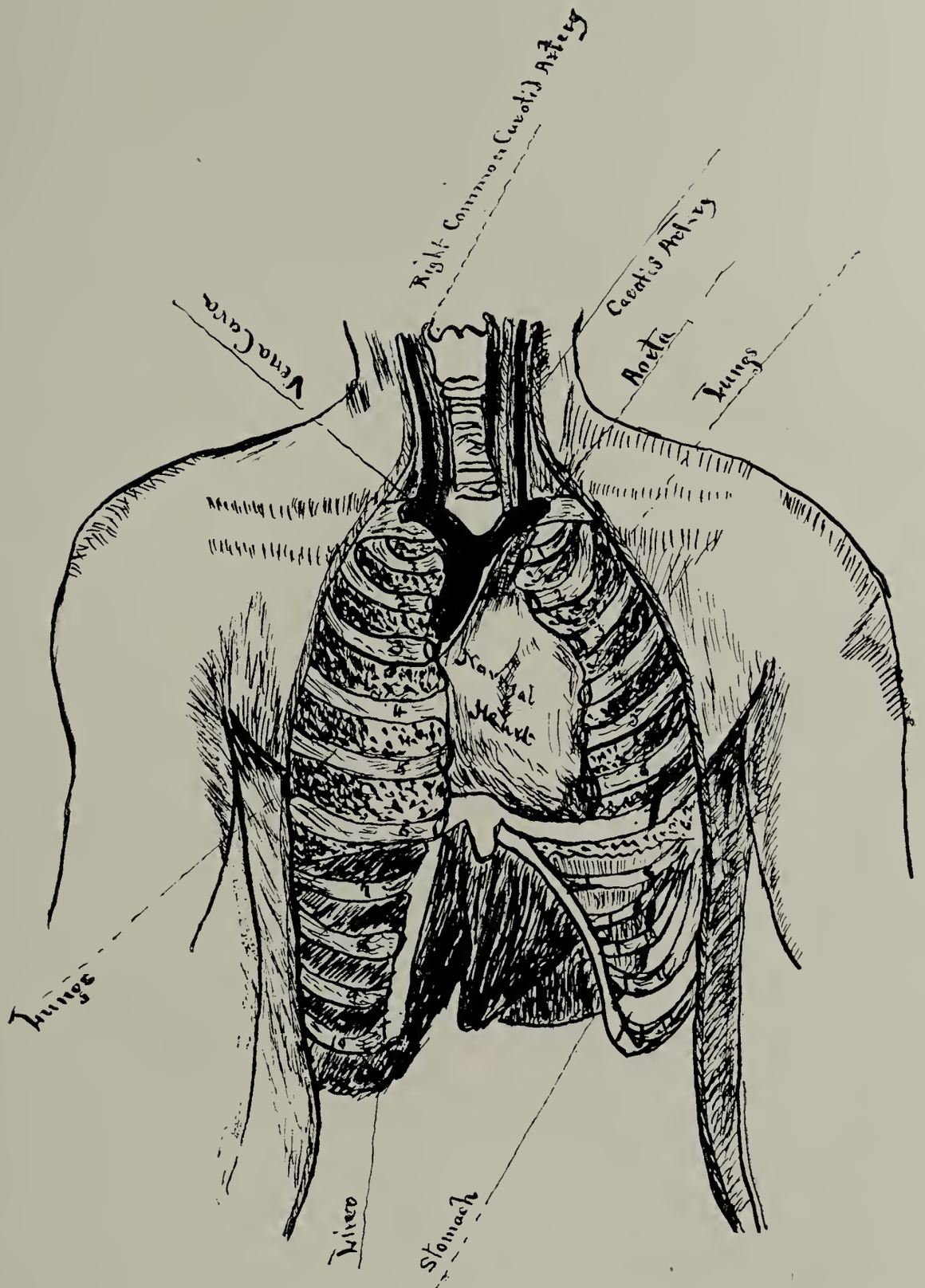
Physiologists claim that the critical period of our arterial system, when violent exercise may be followed by a yielding of the elastic coats of the arteries or the heart valves, is in the neighborhood of thirty-two years. Probably 40-50 per cent. of our militia approximate that stage of life.

Myers* thus speaks of this class: "Men who have settled down to the real business of life * * * who undertake violent exercise without preliminary training and thus throw unexpected strain on the heart and blood-vessels. * * * sow the seeds of organic heart-disease." Albutt,† a distinguished English writer, adds: "In untrained men driven by haste or peril, prolonged effort, incessant and severe strain and fatigue products come in to complicate the reckoning, and permanent harm may be done."

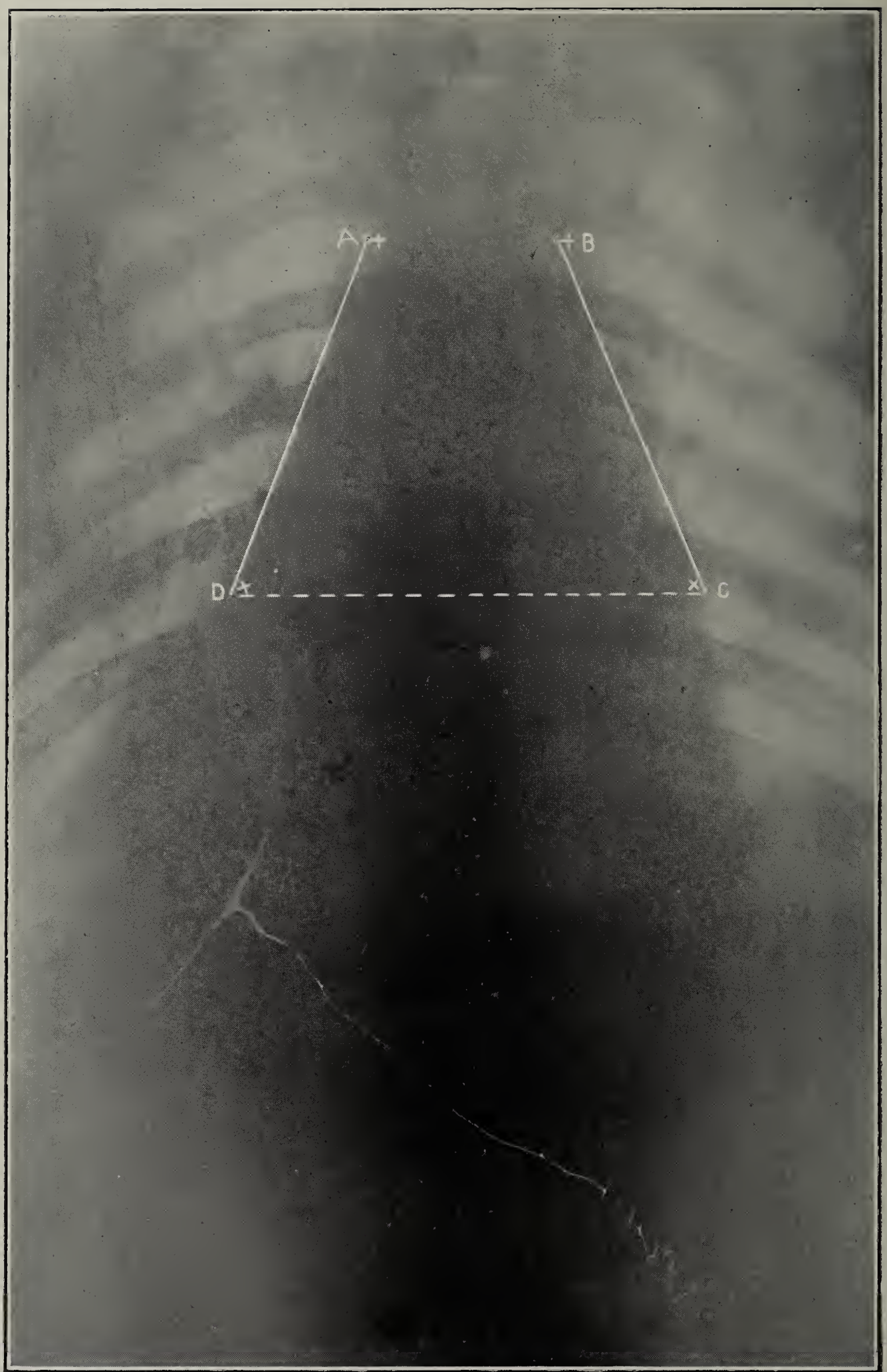
During the War of the Rebellion, Dr. DaCosta, of Philadel-

*Op. cit.

†Albutt's "System of Medicine."



Showing Normal Relations of Heart and Lungs. Modified from Grays Anatomy



Shaded Lines Indicate Enlarged Heart.
A–D—Right Border. B–C - Left Border. C—Apex of Heart.
Shadow below D–C Liver. Note Expansion of Right Border.

phia, treated 200 soldiers suffering with heart strain, in the city hospitals. Of these, only 38 per cent. recovered sufficiently to return to duty. Most of the remainder terminated in chronic heart-disease. Surgeon M. K. Taylor, U. S. Vols., reported a large number with dilatation and thinning of the heart walls on the right side; of these, few recovered sufficiently to resume duty*. The literature of French and German writers is replete with instances of this injury among young soldiers and we will dismiss the subject with a brief mention of a case which has come under the writer's observation: Sergeant S——, Twelfth Regiment, N. G., N. Y., age thirty-two years, who, up to the time of the accident was in sound health and strength, participated in a hard march, estimated at twenty-five miles within twenty-four hours, during the fall maneuvers at Manassas. On the following morning he experienced a sense of exhaustion and faintness, necessitating relief from all duty. An examination of his heart by the regimental medical officers revealed evidences of dilatation. His face was blanched, pulse irregular and intermittent, and although improved at the present date, it is questionable whether he will ever regain his former vigor and activity.

The radiograph placed in my hands through the courtesy of Capt. S. A. Brown, Asst.-Surg., Twelfth Regiment, shows the extent of the heart enlargement, which is marked in the right ventricle. By pressure against the contiguous lung the apex is forced to the left of the normal line. For purposes of comparison, we also submit an outline of the normal heart.

It is reasonable to believe that many other militia soldiers were victims of a similar accident, and the possibility of such an occurrence among untrained troops, is a patent appeal as to the wisdom of such unexpected and exhausting efforts, as are said to have characterized the fall maneuvers.

Two other serious heart complications occurring among members of New York regiments, one of which terminated fatally, have come to the writer's knowledge, but in these instances the diseased heart was of long standing and was naturally aggravated by the strain, so that primarily the maneuvers were not responsible.

In conclusion of this interesting study, a quotation from Mauret,† of the French Army, is appropriate. Discussing the

*"Medical and Surgical History of the Rebellion.

†*Leo Maludio dn soldat Manut Medicine Major.*

subject of heart strain "Cœur surmene," so called, he adds: "To escape the derangement of the circulation, so common among young soldiers in the first months of the service, *it is wise to submit them to methodical training, so as to prepare them gradually and slowly to a degree of muscular force and resistance to fatigue, which they must exhibit at the expiration of a certain time, to satisfy the demands of the military profession.*"

Rheumatism of the acute articular type is another affliction to which young soldiers, whose system is not prepared for great fatigue, are prone. According to Trousseau, Hardy, and Behier, Gubler, Peter, and others, the disease is more the result of extreme exhaustion in those unaccustomed to great exertion.* The imperfect elimination of the products of fatigue play an important part in the causation of the disease. Mauret† shows that the disease is particularly frequent in recruits, whose muscular system is unprepared for the strain of service.

DISEASES OF THE DIGESTIVE SYSTEM.

Can anyone question the benefits possible from carefully regulated physical exercise, in functional disturbances of the stomach and bowels or inactive liver. The physiological explanation of such benefits has been explained through the close affiliation between the voluntary muscles and the sympathetic nervous system. The fact that men show increase of weight after a brief period of guided exercise, is a fair proof of its beneficial effect upon the digestion and blood building functions.‡ On the other hand, there can be no doubt that weak men or those overtaxed by fatigue yield much more promptly to diseases of the bowels and stomach. It is claimed by many authorities that raw soldiers are much more susceptible to typhoid infection than those hardened by previous service or training,§ as a result of their tendency to exhaustion. In considering the relative number of typhoid fever victims in the volunteer and "regular" regiments, participating in the recent war with Spain, there is good evidence that the disproportion was largely in the favor of the latter. However, this disease is so uncertain in its intensity and insidiousness, that no class of men, strong or weak, can feel safe from its ravages where local conditions or food favor its spread?

*Du Pseudo Rheumatisme de Surmenage. *Gazette Med. de Paris*, 1885.
†Op. cit.
‡Reynolds System of Medicine Vol. II.
§Munson's Military Hygiene, p. 50.

CAN THE POWERS OF RESISTANCE BE DEVELOPED?

We now arrive at the practical end, which has prompted this discussion, and would recall our statement that the training of the "regular" forces and the organized militia can not be on identical lines. And it is here we come to the parting of the ways, if we can hope for anything approaching physical equality in the State and National forces. While physical training proper, forms small part of the system of preparing our army for service, yet the "regular" has certain advantages compared to the militia soldier, which explains his relative immunity from sickness and other disabilities of service. His careful selection, regularity of living, open-air life, abundant and well-cooked food, are factors giving him untold advantages over his comrade in the militia.

The records of the Rebellion show that 50 per cent. of the volunteers were rejected by the medical officers, and the greatest proportion was found in *such* men as constitute our militia at the present date, namely, mercantile and professional, whose ratios of rejection were 52 and 47 per cent., respectively.

Unskilled laborers gave more favorable figures, only 38 per cent. being thrown out. Of those who had former military service, but 18 per cent. were rejected.

In the event of war, therefore, can we expect our militia soldier, in spite of the best hygienic precautions, clothing and medical attention, to emerge from his badly ventilated office or mill, his laboratory or store, and meet the strain of service without shock, unless his system has been in some way fortified? No, it is an improbability that he will meet it without a reaction that usually places him *hors de combat.*

It is this type of a hastily assembled force that offers the oft quoted ratio of five deaths from sickness to one killed in battle, and we would here recall that the German forces, in the War of '70-'71, somewhat reversed the figures, the proportion being .4 to 1.*

This favorable showing has been attributed by thoughtful students to the careful physical development of the conscripts and there is no reason to doubt the explanation.

Can we hope for similar results with the militia? It is a knotty problem, requiring time, self-denial, regularity and no small amount of patience. We can do not more here than to

*Froelich Militaire Medicin.

indicate the general principles upon which training should be carried out.

Primum non nocere, should be the watchword and in this connection, we again quote Myers, of the Coldstream Guards,* who lays down the following principles: (1) That while exercise is necessary * * * carried to extremes it may develop organic lesions. (2) In manhood, no violent competition should be attempted which would throw great strain upon the thoracic organs, unless previously examined and pronounced sound, *nor till their full powers have been brought into play by careful preliminary training.*

Parke also adds: "As prolonged exertion often leads to secondary atrophy of muscles, the axiom is to alternate with long intervals of rest.† We must treat with two classes of men in formulating any satisfactory system: (1) The young and undeveloped man from eighteen to twenty-five years of age. (2) Those who have reached the physiological climax of growth and are approaching middle life.

Now with the first class, two objects are sought, to improve and extend the growing figure and maintain a healthy resistance to fatigue. The expansion of the lungs and thoracic cavity by such exercises as bring into action the muscles of the back and shoulders, should be the primary aim of any system of athletics, for these men. But it is a physiological axiom that exercises of speed must be associated with any system of gymnastics having this object in view, for, as La Grange claims, just in porportion as the lungs expand by forced breathing, so will the shape of the chest be influenced.‡

To meet this demand, therefore, the following are advisable: running, boxing, fencing, the single-stick exercise, the "setting up" exercise, as now practiced in the U. S. Army, wrestling and swimming.

The bayonet exercise, now unfortunately left out of the drill manual, is developing in its effects and should be adopted in conjunction with the musical calisthenics, so ingeniously described by Butts.

Such exercises of skill as fencing, boxing and bayonet drill, as practiced by the English and French infantry, are of additional advantage in that they increase the soldier's alertness

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*Op cit.

†Parke's Hygiene, p. 63.

‡La Grange. The development of the chest.

and his "muscular irritability." The latter term expresses the degree of reaction which exists between the nerve-centers and the muscles, which respond by their contractions, just in proportion as this development is increased. We may say that the fast runner has marked "muscular irritability," for his leg-muscles are extremely sensitive to voluntary impulses. Exercises of speed have the disadvantage, however, of placing the nervous system under tension if carried to extremes. For the first class of men, the exercises above mentioned should be supplemented by graded work on the horizontal and parallel bars.

With the second class of men, or those whose frames have "set," so to speak, and where we cannot hope to bring about any marked change in the physique, the objects sought are to maintain the powers of endurance and preserve the contractility of the heart and voluntary muscles. The elimination of waste and reduction of fat in this class also demands free exercise of the respiratory functions. But violent exercises and those demanding speed are not necessary for these purposes and are more apt to injure than benefit. Moderate running, fencing, boxing, swimming, the single-stick exercise and bayonet drill come within the category of work in which this class may indulge, providing always, that reasonable intervals of rest are permitted.

Practice marches in the country are of the utmost advantage to all classes of militia soldiers; not only do they develop the automatism so essential to the infantryman, but they accustom the men to their equipments and teach many details pertaining to the adjustment of weights. This is a feature of training upon which much stress is laid in the European armies. It is a common occurrence in the French Army to see the men appear at the daily routine drills with blanket-roll or knapsack on the back.

Armory drills are of limited value for the militia and are a slight test, either of intelligence or military fitness.

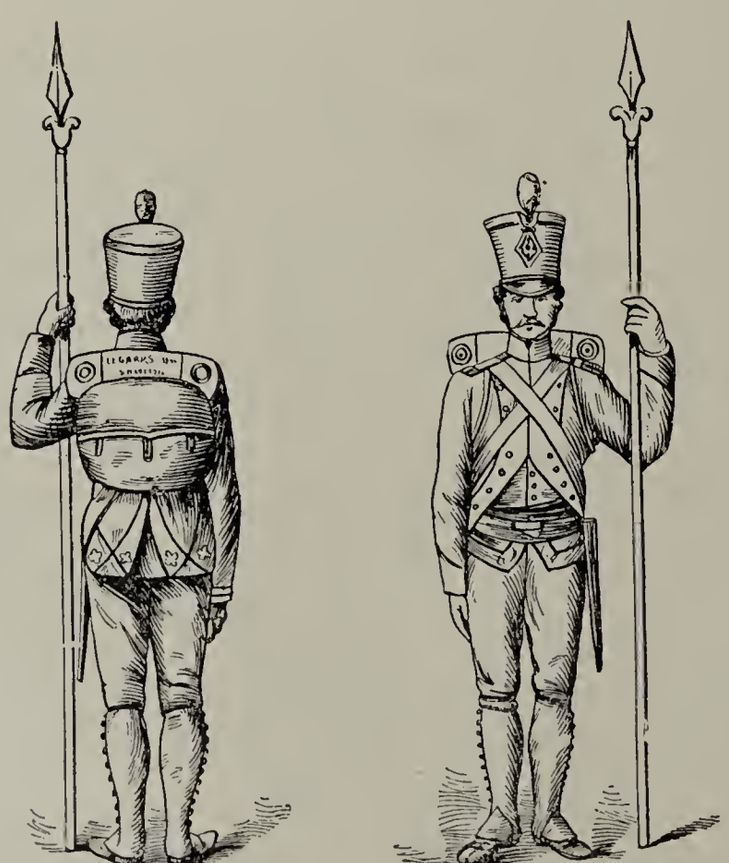
It is the writer's opinion that if the idea of physical training under competent and wise supervision be adopted in the organized militia, a young soldier will feel in later life that he has been more than repaid for his enthusiasm and time expended; in return, he will have to his credit a well set up and manly physique, a fund of health and a love for beneficent exercise which is not ordinarily obtainable in civil life. To the author-

ities, on the other hand, the reward will be a physically competent, alert and presentable body of men, who may be expected to meet the demands of service, with far less disastrous results than on former occasions in the history of the Republic.

In conclusion, we desire to have it understood that physical training, as we have attempted to advise, is no endorsement of the armory contests, as the writer has witnessed them. Such trials of speed or strength more often subject the contestants to a strain which not infrequently does grave harm and unfits them for military service, and it must be further remembered that such contests are an encouragement to specialism in athletics, rather than a wise use of the principles of general development. The scorching bicyclist, for instance, is a particularly fit subject for rejection by recruiting officers, and in our opinion, sows the seed for serious heart lesions and defective breathing powers.

May we not hope that our "citizen soldier" may some day attain the ideal so well expressed by the immortal Cowper:

"He stands erect; his slouch becomes a walk,
He steps right onward, martial in his air,
His form and movement."



A STATEMENT OF THE PRESENT NEEDS OF THE COAST ARTILLERY.

By Lieutenant GEORGE M. BROOKE, Artillery Corps.

IN the following article the writer has avoided studied analysis and the discussion of details as much as possible, and has merely tried to state what he considers to be questions of theoretical fact.

It is generally acknowledged by persons familiar with the coast artillery that changes in that arm are needed. Reports now and then indicate that the number of men and officers is not adequate for the manning of fortifications already completed. This, of course, is due to the failure of Congress to allow for an increase of the artillery, and such deficiency has been thoroughly discussed in official reports of general officers and of others competent to know. It is not my purpose to dwell on the incongruities of supplying a complete matériel and yet neglecting to grant the personnel necessary to the development of its tactical efficiency. But as it is generally agreed that there are other serious needs of that personnel aside from increased numbers, it is my purpose to make certain suggestions concerning its organization. It is also supposed that my readers are familiar with the present conditions in the coast artillery service, and of those co-existent with the past few decades.

The Coast Artillery of our day is a distinct and highly technical arm, requiring a higher technical training and education than is necessary for the rest of the line; and that training is not in itself purely military. Not only is more advanced education and training required, but the coast artillery service needs inducements in order to create spirit and to make men stick to it.

Provisions for instruction have been and are being made, but in the present state of the arm, as well as for some time past, the curriculum of studies is not, and has not been for any period of time, definitely fixed. This is so, notwithstanding the efforts made to determine and establish one for officers. Too many persons have the selection of text-books for the instruc-

tion of the enlisted personnel. There is never definiteness enough. For the men, the captain, or perhaps the lieutenant, who happens to command the company, practically makes his own course. The service requires committees of a permanently established general board to compile books of pure technics suitable to our coast artillery needs, and such books when compiled should be mastered by the mass of the enlisted personnel under orders of the War Department as a boy masters his school books or a soldier his drill. Their study should be a part of drill, as important as drill, the foundation of drill.

For the sake of uniformity and thoroughness, a definite standard of instruction and proficiency needs to be laid down for the whole coast artillery. Companies have need of being brought more nearly to a generally accepted standard of proficiency than they now are. Too much is left to the personal equation of captains. A definite standard of excellence, it would appear, should be laid down and prescribed, governing a definitely established course for different grades of the enlisted personnel, beyond the limits of which course no man would be required to advance, yet to which limits he must advance, and beyond which he should be afforded every opportunity for thorough and more advanced instruction should he so desire.

The army ought not to be equivalent to a collection of private schools, and the company commander allowed to follow his own theory and course like a private teacher. If the army is to be compared to a school system at all, it should be to a great autocratic, public school system, controlled by one head in all matters relating to the established standard. When this standard of proficiency had been attained by any individual, the resemblance to methods of private instruction would be allowable in his later education.

I do not advocate decreasing the individuality of either junior officers or enlisted men; but there is ample room for individuality without destroying the cohesion of large commands, the most important of which is the fort, or of the coast artillery in general, by a latitude which is in reality the absence of a sufficiently strong guiding, controlling and co-ordinating power. Such a power can cause coherence by standardization and can at the same time produce *ésprit* and *élan* by a readiness to praise and encourage originality and individuality where shown in advancing the interests of the service in general be-

yond fixed requirements. Republican principles cannot be well taken as military principles except in special cases, of which cases the system of military instruction can certainly never be one. This is true, although republican principles may, when applicable to the requirements of special cases or times, impart an individuality and enthusiasm, the results of which are no less than grand. In the days of smooth-bores there was definiteness. There is no reason why definity, standard and system should not keep pace with progress, even though that progress be more rapid to-day than yesterday. We need system, standard and definity of method in order to give the men a settled mind and something by which to gauge their own individual efficiency. The government is then likewise afforded the same opportunity.

There are captains who zealously strive to carry out the orders of the War Department relative to the instruction of enlisted men, but who are discouraged by the lack of books, which are often adequate neither in numbers nor in character for even that course which has been so far outlined or prescribed. This economy of books is a false economy. We can only acquaint Congress with the facts by continued repetition. Let the coast artillery have a solid school system applicable to enlisted men, as well as to officers, or let it have none at all. It is acknowledged, in general, that the army needs schools; then let the coast artillery in particular have good school methods and solid, thorough, definite instruction; not pseudo-schools and pseudo-instruction and general theoretical smattering and dilettanteism.

There is a very wide breach between the knowledge of officers and the knowledge of enlisted men. The younger officers usually have theory, but little practical knowledge. The older and better non-commissioned officers, as a rule, have thorough practical knowledge, but are possessed of only crude theory. The younger officers more often do the teaching. They cannot always impart what the men need, or at least cannot impart it in that manner most suitable to the thorough instruction of the men. It seems then, that all junior officers should be required as soon after assignment to the coast artillery as practicable, to qualify as practical gunners. To this end a thoroughly practical gunners' school, composed of only junior officers, and for the instruction only of officers, should be established in every post, and should remain open constantly during all seasons of

the year. All young officers should be made to get out and do the practical work. Theory is absolutely necessary for officers, but to give them the necessary standing with the men, practical ability and training are as necessary as thorough theoretical knowledge. This is equally applicable to officers from whatever source they may come. The alert and highly trained graduate of West Point would find it only a question of a short time before he was able to qualify as a thoroughly practical gunner. Here it may be remarked that as long as instruments are so valuable or scarce, that men and officers can either not practice with them, because they are too few, or because of the fear that they will be broken, good results in practical instruction will never be obtained. There is always talk of using the transit and various other instruments, but few men ever do use them, or else a group of men stand gaping around while some officer, or non-commissioned officer, mysteriously talks in big names. And the men naturally imagine that the use is as hard and mysterious as the name. Many men in the lower ranks of the engineering profession are trusted with instruments, and become expert even to the making of adjustments, but how many, even of our officers are so skilled? They fool around perhaps for a day or two in a year, and get the "idea" again—and then they quit. In books and instruments we are too stingy. We attempt too much. We qualify rather than teach. If the man or officer has the knowledge beforehand, all right. If not, he never knows, unless he teaches himself, but he often still remains in the service, nevertheless.

As it is now, many officers are afraid to try to acquire this practical training, before the men, for fear of failure; some never acquire it as they should. A practical school of gunners' instruction for junior officers, and examination before such board as might be deemed suitable, would obviate much that now is. This is equally applicable to the field artillery service, where a junior officer should not only be required as a practical gunner, but should be made also to qualify as a driver. Too much is supposed and left to the initiative of individuals, or is presupposed to have been acquired. Sight is lost of the practical impossibility of an officer's learning these things where his perhaps clumsy efforts are more often exposed to the criticism of enlisted men free to observe. By failure or by awkwardness, he is lowered in their estimation however worthy may have been his efforts. No insignia or badges should be worn by

officers to indicate qualification as gunners, for all officers should be expected and required to be gunners, though perhaps not to qualify as skilled, direct gun-pointers, for which there should be a separate grade of the enlisted personnel.

Furthermore, the coast artillery needs a corps of non-commissioned officers resembling the corps of warrant officers of the navy to fill the gulf of difference in knowledge between the two bodies of the personnel. The men of the coast artillery all become discouraged, because there is no definitely established standard of excellence. All is still too vague, too theoretical, too lacking in thoroughness to appeal to the man of action, though much is attractive, if not thorough and satisfactory, to the man of books, whether he be officer or enlisted man. What the coast artillery now needs is the strong co-ordinating power of a higher and central will and intelligence. That will and intelligence must of necessity be superior to that of any one mind, however able; yet it must be guided by one will residing in an individual reenforced by a purely scientific bureau which supplements his brain in detail. A board is merely the embryo of the organized power of a scientific bureau upon whose central head and subheads depend committees or boards of specially trained men, supplementing the bureau for the solution and development of special problems; and the chief of artillery is but the embryo of the chief of a coast artillery bureau. Until such a bureau is established, and a separation made between the coast and field artillery, we can never expect to have a thoroughly efficient coast artillery. Modern requirements of technique render these changes urgent.

It would be well to make a division of coast artillery privates into recruits and second and first-class privates. Every enlisted man should be officially a recruit for his whole first enlistment. As matters now stand, there are sometimes first sergeants who are only in their first enlistment; such men can rarely be efficient from the diciplinary standpoint, or from the standpoint of the tone and dignity of the service. Many of the best men of the coast artillery go on discharge to infantry and cavalry. There should be some way to hold them. A cavalryman or infantryman rarely, however, comes to the artillery of his own will. The corps of engineers, the signal corps and the hospital corps have first and second class privates; the coast artillery is due the same.

The non-commissioned officer should not wear a gunner's

badge or chevron, nor should he draw additional gunner's pay, for the reason that his rank should carry this qualification in itself; and that rank should also carry higher pay than that of the highest gunner. In the first enlistment all men should be recruits, however capable; in all succeeding enlistments, however long a time might elapse until re-enlistment, they should be enlisted as soldiers of the private's grade held by them at date of last discharge. With the exception of lances, non-commissioned officers should never be returned to the grade of private, but should be dismissed, discharged without honor or dishonorably discharged, as the facts of the case warranted.

Besides this, we need some sort of a mental examination to qualify men for enlistment in the coast artillery, requiring somewhat more knowledge than that regarded as necessary for the mass of the line. Again I believe that the theory of excluding men under twenty-one years of age from enlistment is a false theory. Whatever the doctors may say, it is the general experience of the service, military and naval, old and new, that men who have entered the service as boys make the best soldiers. I do not mean to say that boys are the best material for enduring the hardships and temptations of service. This they certainly are not; but there can be created means of getting rid of those who do not stand the moral and physical test, and the enlistment qualifications can be more rigidly maintained in order to exclude the unfit. Besides this, such material rapidly seasons with age and service, and becomes, as before said, much more efficient in the end than that enlisted older. Young material is pliable, willing, imbibes discipline readily, has spirit and enthusiasm and looks forward brightly to life. These qualifications are at the same time its strength and its weakness, because its susceptibility opens it alike to good and bad influences. Some captains take a personal interest in their men as individuals; others do not. Those who do, of course, get better results from young material. Men who enter service over twenty-one, are more than apt to have failed in civil life. By taking men young we get more applications and better pick. It may annoy the department to receive letters from the parents of boys, but the more boys, the better service when they have become men. I would even advocate the enlistment of boys at seventeen, as musicans, provided that they came up well to requirements. Such has been at times the custom of the old service. It it not necessary that a man

should drop the designation of recruit in his first enlistment. It is not well that he should do so. He should learn that it takes time to become a soldier whoever he may be. He should learn to respect old soldiers. They would more respect themselves were they separated from him officially by one enlistment. He would the more respect his non-commissioned officers were they the pick of the old soldiers. One bane of our service in general is the too great intimacy between recruits, old soldiers and non-commissioned officers. We cannot trust in mere formalities of rank. There must be actual differences, or rank is only a sham. It is necessary to train the old soldiers and the non-commissioned officers, as well as to put a difference of one enlistment between them and the recruit, so that they can set him an example. With actual superiority of training, and with permanency of rank in the case of non-commissioned officers, rank will mean something. The dignity of rank cannot be maintained by title alone. Service, experience, training, education, ability and age, as well as adequate natural dignity and privileges are necessary to support rank. It is for these reasons that our non-commissioned officers are so little respected in general. That is why the men call the sergeant, or even the first sergeant by his first name, or by a nickname, before other non-commissioned officers, or even before his own face; while if any but a very dignified old soldier insists on being called by his title, he is usually thought a very poor fellow and quite often a fool. Proper discipline and esprit cannot well be expected with such a system. It would be well to increase the number of years' service requisite for eligibility for commission to the fourth year of continuous service, thus debarring all recruits.

The whole army needs more pay. The recruits should have as much as the private of other arms now has, who has no continuous service. The second-class private should have more; the first-class private more than he, the gunners of different grades pay in proportion to their qualifications. The lowest non-commissioned officer, except the lance, should receive more than the highest gunner. This increase of pay is necessary to secure better men. No military man can deny that it is necessary when better educated men are desired. Pay will always be a large factor under a system of voluntary enlistments such as ours.

Coast artillery men of excellent character should be sent on

discharge, should they so request, to any other artillery post within reason. This is often allowed men of excellent character on application to the military secretary, but it should not be a matter of favor, but should be constituted by law a matter of right. The preference of desirable and distant stations should be given to men of special attributes of character, such to be noted on the discharge under the head of character or abilities. This would put a premium on good, efficient and faithful service. The man's special abilities and general efficiency, as well as character, should be noted thereon in special as well as general terms.

Furthermore, the coast artillery needs separation from the field artillery. It is unnecessary to dwell on a fact so well known as that the artillery organization is still anomalous, notwithstanding the fact that the tactical incongruity of the composite coast and field artillery regiments has passed away. The tactical functions separating field from coast artillery are perhaps as wide as those separating infantry from field artillery. They are similar only in so far as field guns and coast guns are cannon. The theory of their tactical employment is so widely different that it can hardly be put in the same category.

The coast artillery needs a chief, not less than a major-general, who should command the whole of the coast artillery, as the general of a territorial division commands that division. His duties would be also necessarily bureaucratic, because of the demands of modern technique. Surely the coast artillery might have at least one major-general. I do not mean to say that he should necessarily take rank in the arm, for while it is customary for officers who are chiefs of bureau to take rank in the department at whose head they are, and while the artillery is now called a corps, and while the whole coast artillery should have a bureau to direct its affairs, we should not lose sight of the fact that the coast artillery is a tactical arm charged with operations in a definite tactical sphere—the defense of a sea coast; that it is an arm and not a staff corps; that the bureau is necessitated in order to secure the proper development of technique, but that it is but supplementary to the tactical functions of the arm. This great command should be subdivided into divisions, much larger than the present coast artillery districts, the functions of whose commanding generals would not be merely territorially administrative, but due to the inseparability of men from material, and to the immovability of the latter would be

also tactical in character. Thus the territorial and tactical divisions would be rendered coincident. The able artillery officer selected to command the coast defenses and to supervise the progress of the technique of the coast artillery, might be simply a general officer on general service assigned to command the coast defenses in the manner that any other general is assigned to the command of a territorial division, at the same time, taking up the direction of the coast artillery bureau. The officers of artillery either remain colonels or retire as brigadier-generals, while officers promoted to general rank from the infantry and cavalry continue to advance more often to the rank of major-general. There is a reason for this, for the coast artillery officer is hardly so fitted to command a mixed division or a brigade of field troops as the infantry or cavalry officer, unless he happens to be a man of special and original abilities. His training and experience is special as apart from that required for service with field troops, and except during the usually short term of service with field artillery, he gains no practical knowledge of the tactical employment of even small bodies of troops in the field. But with an arm so great in numbers as the coast artillery, leaving aside the question of equality of opportunity for promotion to general rank of officers of the several arms, efficiency demands the creation of a high territorial command of the coast artillery defenses separable in the functions of its commanding general from the bureaucratic functions of those men who are charged with the progress and development of the technique of the arm; though by no means calling by necessity for the separation in person of the members of the personnel charged respectively with the general command or with the direction of the technique for the whole coast artillery. Such functions or primal command could and should be vested in the same man. The development of the coast artillery needs then to be carried on by a coast artillery bureau whose head ex-officio should be the general commanding the coast defenses. His official headquarters might or might not be in Washington, but to avoid so far as practicable, bureaucratic tendencies of a merely official character, it would seem that he should preferably reside in some principal fortress area, in order also that he might be in position to know the needs of the line of his own command through personal observation and contact. This might not be regarded as practicable for a man whose functions were bureaucratic, but it is reason-

able that the bureau being principally scientific in nature, might follow him, and be established at such place as his headquarters were. These considerations it would seem more necessary to entertain than the usual demands of centralization, which ordinarily would require both his own presence and that of the bureau of which he was the head, at the capital. A wide discretion as to the situation of his headquarters would seem more conducive to large results. His principal duty would be personally and at his own discretion, conforming to no bureaucratic rule, directly to supervise the land defenses of the coast line, and the personnel and material appurtenant thereto; and as head of a scientific bureau, to control the systemization, standardization and development of the technique of the coast artillery. The coast artillery should and does know its own business for the reason that it is its own special study, and the Board of Ordnance and Fortification would still exist independent of a coast artillery bureau, and for the purpose of settling very wide questions not within the range of the engineer, ordnance or coast artillery bureaus, and in special relation to questions depending on congressional legislation or appropriation.

Such a position of a general commanding coast artillery would involve a staff consisting primarily of a chief engineer and chief ordnance officer. The duties of the Engineers' Department, of the Ordnance Department and of the Coast Artillery conflict on the border line because they are equivalent to three separate bureaus. The Board of Ordnance and Fortification can suggest, but it cannot command, and the Coast Artillery, even though the whole artillery has been granted a chief, has not risen officially to the dignity of a distinct technical arm, demanding a separate bureaucratic, as well as commanding head. It should not only occupy a separate tactical position and be a separate tactical command, but its technical position should be dignified and extended by the creation of a bureau on an equal footing with those of the engineers and ordnance.

Thus if the coast defenses entire were a command as any territorial divison is a command—the command of the littoral being in no way under the command or influence of any territorial commander of field troops, in time of war all other arms serving within the limits of or adjunct to the coast artillery defenses being under the commander of such coast artillery

defenses; and if this general command were subdivided into territorial divisions under major-generals or brigadier-generals on the general list, or promoted to rank in the artillery, if Congress so pleased, or to be colonels, if generals were not authorized, such divisions being known as the North and South Atlantic, Gulf or Pacific, coast defense, coast or marine artillery divisions, or by such other names as might be deemed suitable, and if each general commanding a division, as well as the general commanding all the defenses had on his staff a chief engineer of the Corps of Engineers, and a chief ordnance officer of the Ordnance Department, whose valuable and special services might be supplemented by junior officers of these corps, or by artillery officers of proper acquirements detailed for such duty, all accessories, as the necessary staff of draughstmen, civilian engineers and employees, or specially detailed members of corps or arms involved, being furnished; and if general design of fortifications so far as mere structural questions were concerned, and engineering theory of construction alone originated in the office of the chief of engineers; if in the same manner the Ordnance Department confined itself under the Chief of Ordnance to ordnance fabrication and design, while execution, disposition, tactical considerations, and modifications of construction were considered and controlled by engineers and ordnance officers on the respective staffs and under the personal direction of generals commanding coast defense divisions, and were co-ordinated, limited and controlled by these generals, under the general supervision of a general commanding all the defenses, we would have co-ordination and harmony, or at least the power of systematically and definitely settling disputes caused by differences of training and of ideals, and less in scope and questions considered by the Board of Ordnance and Fortification, and more in consonance with the needs of the Coast Artillery Service.

An allowance of more officers as a surplus for boards and for the performance of duties connected with a coast artillery bureau would, of course, be necessary for the fullest efficiency, for undue economies along such lines are the most hurtful to efficiency of all economies.

Thus a coast artillery bureau constituted of a number of highly trained officers, divided into subbureaus to which were attached boards appointed for the consideration of special questions, permanently supplementing the working force of the

bureau until such questions were solved; such subbureaus with their supplementary boards considering such subjects as drill, systematic instruction of enlisted personnel, development and systematic adoption of mechanical accessories as instruments, graphic tables, etc., and questions of systematic control and of development of technique in general, it is believed that greater progress could be made at the same time that every man of the commissioned and enlisted personnel knew better what he had to know. This bureau, which should be preserved scientific as distinct from merely official or administrative, would be the brain or a vast supplement to the brain of a general commanding coast defenses—the brain of the coast artillery; and the commanding general under Congress and the secretary, guided broadly by official suggestions of the Board of Ordnance and Fortification, would be the will of that brain. The coast artillery is a tactical command. It is also a scientific bureaucratic command, but the latter is as aforesaid but an adjunct to the former. Neither of these functions should be developed while the other is neglected. If we develop technique while we neglect the administrative and tactical functions, we fail. In the same manner we fail if we create a great command with a special co-ordinating and consolidating administration and neglect technical development.

It is believed further that the coast artillery should be organized to correspond to its tactical functions. These functions are more nearly analogous to those of the navy than to those of an army in the field, which latter is organized to handle armament free to move within very wide limits and capable of mobility almost as great as that of unarmed forces, while the units of armament of the coast artillery are for all practical purposes definitely and absolutely fixed. The units of armament of coast fortifications being variable, so should be the detachments serving them. The organization of the personnel should conform to the tactical rationále, the ends of which demand variable units of armament. The fort personnel in such an organization corresponds to the personnel of the ship's company, the fire command to that of the squadron, and the district, as we know it, to a division of the fleet, except that in the coast artillery we have only to consider tactical conditions as they would be considered by a naval force permanently at anchor.

The ship's company is organized by her executive officer,

under her captain's orders, into elastic units which conform to the requirements of an armament permanently fixed. It would be more rational to organize the personnel of a fort also in that manner, and to assign the men and officers to their duties under the usual manning table in the same manner that the personnel of the ship's company is assigned by station bills afloat.

Such action would naturally involve the exercise of ingenuity on the part of chiefs of bureau in the War Department and of their clerks, in order to devise new forms for reports and returns.and it would also perhaps demand a different method in the assignment of recruits to coast artillery commands from the one now in force. A new method might be found necessary in order to keep organizations as nearly as possible on an equable and permanent level of efficiency, to which a degree of permanency of personnel is necessary. It might hardly be expected to man and reman a fort in the same manner as a ship going in and out of commission. It would perhaps be a perplexing problem, so far at least as details are concerned, administratively to handle such fort commands in the manner that ships' companies are handled, and yet it would perhaps be difficult to secure the unity obtainable in a ship's company without a similar system, for the unity of ships' companies is assured by the fact that officers and men are associated together for definite limits of time determined by the length of cruises. The present artillery company by designation, and the ship itself, both remain to give *eclat* to future personnel, and the question arises whether the fort could have this influence. It is certain that it could under a wise system of assignment of the personnel. both officers and men. Since administrative and tactical units should, as far as may be possible, always coincide, difficulties will arise in preserving such units in quarters, but this is a mere question of detail which can readily be solved by application. The personnel of all the divisions of a fort command so created should so far as possible remain permanent, and changes should be made only to suit requirements of armament or emergency cases, and in special cases to suit the wishes of men of excellent character who might wish to transfer for personal reasons from one division to another with the permission of the fort commander.

The commanding officer, once his command was established, would requisition such additional number of men as was necessary to meet emergency or to man new armament, within

the limit allowed, thus affording the maximum of elasticity of personnel. The men would be requisitioned to fill the fort's manning table for gun's crews, instrument details, draughting-room details, and the like. The fort would then be organized into guns' crews, instrument, engine-room, and draughting-room details, etc., and these incorporated into divisions of personnel for the service of batteries and groups of batteries with their accessories. It is probable that with such an organization it would be necessary to put all raw artillerymen at special rendezvous directly under the orders of the commanding general of the coast artillery defenses, or to charge him with the entire machinery of recruiting for his arm. The term *Commanding General Coast Artillery Defenses* is used in preference to the term "Chief of Coast Artillery," because while such a general would be the chief of a scientific bureau such bureau would be merely the directing brain of the coast artillery, whose primal function is tactical. Such a statement seems to be a mere plagiarism, but names have far reaching influence.

Furthermore, it may be said that gunners need to stand a very practical test rather than theoretical. An examination of like character to that of field artillery gunners would be quite satisfactory. With the coast artillery, however, a certain amount of of theory for a gunner is essential, more essential than for the field artillery gunner, but the coast artillery ever since the introduction of new guns and new material, has played with theory, so to speak. System, standard and definity are nowhere in the service more greatly needed than here. There should be a class of direct gun pointers in addition to the classes of gunners, to be composed of men who prove themselves expert at direct, subcaliber practice. The most skilled in this practice having been given their chance at the rapid-fire guns before a board, should be qualified as *direct gun pointers*—a special class distinguished by a special badge or chevron. They need no theoretical knowledge, but being eminently practical would be found a most valuable accessory to the personnel. Two dollars a month is a paltry sum to give a man qualified as a gunner. A fight had to be made to get that. Congress has so many things to do that constant repetition is necessarily required to secure most necessary ends; this again is a question where economy when too carefully considered results in deep-rooted and extended injury to the powers of national defense, which depend so greatly upon the efficiency of knowledge and

the spirit of the personnel involved. A man qualified as a mere direct gun pointer should have at least two dollars per month in addition to his pay. A gunner of the lowest grade above him should received about five, the first-class gunner ten and the master gunner, as recommended by the chief of artillery, fifteen dollars in addition to their regular monthly pay. The number of gunners might well be limited to a certain per centum of the personnel, and examinations be made competitive, but so far competitive alone, as the *application* of knowledge and of principles was concerned. This it is believed would give dignity to the position of gunner, and at the same time would forward the interests of economy in a manner not hurtful to the interests of the service. In theory, only, a standard of proficiency is required below which no man can qualify as gunner but which would not prevent his competing for direct gun pointer, but above which a certain number of successful, practical competitors should qualify as gunners.

We may briefly also consider the question of uniform. The man in brown fatigue—the uniform which is most commonly worn in coast artillery forts, looks and feels like a laborer. A detail to clean and oil guns and carriages made by roster instead of the performance of this work by the whole command preceding or succeeding drill—which latter was at one time the custom—equally well with the latter method, accustoms the men to such duties while at the same time it saves much clothing and offers an encouragement to neatness, which is a most essential part of self-respect. This system of special detail being in force, the men may be clothed in a practical, agreeable and distinctive uniform of any desirable color. The coast artilleryman needs a loose, airy uniform, which will not impede his movements, and which will at the same time be both neat and comfortable.

Further, with the fort organization conforming to that of the ship's company, a new corps of non-commissioned officers is needed and can be obtained through a system of recommendation, and by a system of examinations before competent boards. Disciplinary requirements would seem to demand that these examinations be equal practically to that of the highest gunner in professional theory. For the highest grade of non-commissioned officer of the line, that is, for the grade of non-commissioned officer suited to the position of gun commander, examinations should contain, in addition to professional re-

quirements, some general educational qualifications approaching to those required for a lieutenant on promotion from the ranks or from civil life. For the lower grades, passing of the highest gunners' examination and the demonstration by examination, reenforced by recommendation, of ability to command, should be required. Mere ability to command must in these days be supplemented by mental attainments. The standard of intelligence of the whole coast artillery should therefore be raised. That being done, we would more rarely have the anomaly of an excellent ability for command, superceded by more intelligence united with ability for command in a very mediocre degree. Men should be rigidly excluded from the position of non-commissioned officer who have not both intelligence and ability to command above the average. The necessary placing of intelligence first often brings a man of weak will but superior education into position of command over those far more fitted practically to command than he. Discontent, uncertainty and distrust is often produced in the ranks thereby, resulting in a laxity of discipline.

With a permanent corps of warrant officers, picked divisions might be made up of men having longer terms of service. This would create the emulation necessary for disciplinary purposes between recruits and old soldiers, and which the service so sadly needs in all its branches at the present day. A citation of these views may appear to be a reversion to principles in practice in the armies of an earlier day. It may be answered that while we have made many admirable reforms in the service within recent years, an idea more or less hurtful to the true spirit of command and of discipline has grown up—partly due to these changes and partly to the slow absorption of green material incident to recent expansion—which may be checked and controlled by a reversion to old principles, the abolition of some of which has not worked good, and by the introduction of new ones based on sound theory and pillared by the experience of the past.

To have qualified gunners greater in proficiency and knowledge than non-commissioned officers is an anomaly. Adhering to the view of a body of non-commissioned officers similar to that of the naval corps of warrant officers, the members of this body would be held permanently in grade, eligible to promotion to higher grades under the orders of the Secretary of War or the general commanding the coast artillery, and warranted

by one or the other of these officials. This body would better ease the gulf of rank and knowledge existing now between the commissioned officers and the mass of the enlisted personnel than does the present body of non-commissioned officers. Officers who desire to hold to the present system of promotion of non-commissioned officers, state that the non-commissioned officers so appointed are a greater aid to carrying out the views of the captain. Undoubtedly they are, and often they are but the reflection of his character, for good or bad, according as his views of matters may vary with his character, and often they deceive him. Therefore, if the captain is inefficient, unless he happens to be able to select a good first sergeant, the personnel of his company is ruined. Thus the standard of efficiency of companies is more variable than it is necessary for it to be. But this does not need consideration in connection with the organization of the personnel herein generally referred to. Those who believe in the present non-commissioned officers' system, would probably desire to make the fort commander the officer to confer the warrant on the non-commissioned officer. It would seem, however, that for the Secretary of War to confer a special warrant on men qualified as a gun-commander on recommendation by a competent board, would be a better plan; while for the lower grade of non-commissioned officers a warrant of the general commanding the coast artillery defenses would be sufficient, and for the lance, appointment by the fort commander of a certain per centum of his command to such a rank during good behavior, would be all that was necessary. Under the present system, long honored by time, a non-commissioned officer on discharge reenlists often as a private for some other branch of the service, or for the artillery stationed at some other post. He thus loses esprit and the spirit of command, and his ambition as well as his incentive to study, except perhaps in so far as he desires to impress himself favorably on his new captain in order to obtain appointment in his new company when a vacancy occurs. He thinks to please the captain, not of upholding the dignity of the service. Such personal fidelity is most essential and should be unlimited were the captain a semi-dependent feudal lord, commanding a band of personal followers; but under a republican government there is but one absolute lord—that is the might of the people, personified in the nation, the administration or in the service which they create. Therefore, under our system of government, the

man's allegiance is to the service created and sustained by the nation. This is generally recognized, but not to the extent which it should be in the body of our non-commissioned officers. Few of these men, other than the oldest and most tried, who have grown veterans during service in one company or regiment (and companies and regiments are not the organizations which tactical considerations demand for the coast artillery) attach sufficient dignity to their position and their rank, and only to such men is dignity attached by the mass of the enlisted personnel. A man once a non-commissioned officer, then a private, and so on backward and forward must deteriorate, or he can at least never rise above a certain comparatively low level, except in certain rare cases of very strong personality or specially favorable conditions. He will inevitably lose the backbone, the habit and the spirit of command. Dignity of position, actual superiority determined by selection and established and developed by steady tenure are essential to efficiency. The material is always with us, or can readily be obtained for the service by an effort to raise esprit, and then all that is necessary is steadily and progressively to train this material and hold it in grade, eligible to promotion for the general good of the coast artillery service at large.

Who in the army would not be discouraged by the loss of trained non-commissioned officers, which loss as aforesaid, frequently occurs by their leaving the old company on discharge and going back to the grade of private in some other outfit, even being designated as *recruit* at the recruiting station, and in orders issued from that station. This is absurd. Even a private on discharge, wherever enlisted, no matter how long out, should be reenlisted as a private in the grade in which he was serving when last discharged. Little things, and names have far-reaching effects.

Much undoubtedly can be done for the good of the personnel of the artillery without materially increasing its numbers, though this is important. First and finally, let the coast artillery be made distinct in name as well as in fact from the field artillery, allowing the latter to gravitate to its regiments of battalions which tactical conditions of the field require.

THE SURPRISE OF THE TABOR BRIDGE AT VIENNA BY PRINCE MURAT AND MARSHAL LANNES. NOVEMBER 13, 1805.

By FREDERIC LOUIS HUIDEKOPER.

*(From the original documents in the Ministère de la Guerre in Paris and the Kriegs-Archivs in Vienna.)**

THE Treaty of Amiens (March 25, 1802), far from benefitting English trade, proved a mere delusion, since Bonaparte, the First Consul, refused to renew the Treaty of Commerce of 1798, and imposed a high tariff to protect French industries; this measure practically closed the ports of France and her dependencies, Holland and Italy, to English goods, and the British manufacturers soon came to desire war which would at least be less prejudicial to their interests than this peace which was working their ruin. In the autumn of 1802, when Great Britain complained that the neutrality of Switzerland had been violated by the troops under General Ney, the First Consul took advantage of this opportunity to dictate to his Minister of Foreign Affairs instructions for the guidance of Otto, the French ambassador at the Court of St. James,

*In the spring of 1897, the writer, who had taken his degree at Harvard and was then an undergraduate at Christ Church, Oxford, was trying to find for the late John Codman Ropes, the author of the "Campaign of Waterloo," some material in the archives of the Ministère de la Guerre in Paris relating to the last charge of the Imperial Guard at Waterloo. While engaged in this work the writer had the pleasure of meeting Prof. William M. Sloane, the author of the well-known "Life of Napoleon Bonaparte," who was also working in the French War Office. At a dinner at his apartments in the Place Victor Hugo, on the evening of Tuesday, April 13, 1897, Professor Sloane called the writer's attention to the fact that there existed in the archives of the French, Austrian and Russian War Offices, an enormous amount of unpublished material relating to the campaign of Austerlitz, and that no authoritative history dealing solely with that one campaign had ever been written. Agreeably to his suggestion, the writer, although still an undergraduate at Christ Church, applied for, and was fortunate enough to obtain, permission to search the war archives at Paris, Vienna and St. Petersburg—a permission which had never been granted to more than two other Americans.

On Monday, October 11, 1897, the writer began his work in the Ministère de la Guerre in Paris, which was not terminated until nearly five months later. He then proceeded to Vienna where he spent several weeks in the Kriegs-Archivs and supplemented his searches by others in the archives of the General Staff in St. Petersburg, where he was assisted by a translator and by Col. A. E. Mychlevsky, of the Military Intelligence Bureau of the General Staff, who was detailed for this purpose.

The entire account, treating with the movements of the French army from the English Channel to the morning of the battle of Austerlitz (Decem-

which strike the key-note of the policy which was consistently followed until 1813. In order to minimize the preponderating power of the British Navy, Bonaparte proposed (1) to blockade England by closing to her trade the coast of the Continent "from Hanover to Taranto," which was to be guarded by French troops; (2) to threaten her with invasion by means of an expeditionary army to be assembled on the Channel; and (3) in case England should induce her Continental allies to make war against France, he was resolved to render these allies submissive to himself if possible. In transmitting these instructions to Otto, Talleyrand made the ominous declaration that

"If England attempts to kindle war on the Continent, her course will force the First Consul to conquer all Europe." †

The two countries rapidly drifted into war which was declared in May, 1803, and lasted until Waterloo. A French army corps under General Mortier immediately occupied Hanover and a formidable army was assembled at Boulogne, the wings of which were composed of detached corps in Holland under General Marmont and at Brest under General Augereau.

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ber 2d), had been finished, and the writer, after a colossal amount of work and infinite pains, had nearly finished rewriting the whole, when, in August of last year (1904) he discovered in the bibliography of Fournier's "Napoleon"—the English edition of which he had been asked to criticize for the *American Historical Review*—a work entitled "*La Campagne de* 1805 *en Allemagne*," by P. C. Alombert and J. Colin. Being very familiar with the thorough work of Alombert as exemplified by his "*Combat de Dürrenstein*"—which treats of the operations of Mortier's corps on the left bank of the Danube during 1805—published in 1897, the writer had well-grounded fears lest they had "stolen his thunder." He promptly sent for the work of Alombert and Colin which was received on September 28th, and found to his dismay that not one single order, report or bit of correspondence between the departure of the "Grand Army" from Boulogne and October 24th had escaped their scrutiny. Even the original maps which the writer copied with such care had been reproduced.

The case, therefore, strongly resembles the discovery of the planet Neptune by an Englishman and a Dane who had worked for years absolutely independent of, and unknown to each other. However, the four enormous volumes and an appendix, amounting to no less than 3000 pages, constitute only part of the work of Alombert and Colin and carry the operations of the French army no further than October 24th. In order for the writer to establish his just claim for the original research on which he has spent such colossal labor for seven years, absolutely independent of and without the slightest knowledge of the work of Alombert and Colin, it was imperative for him to publish immediately some portion of his own work dealing with operations subsequent to those already produced by the Frenchmen. He therefore submitted to the editor of the JOURNAL OF THE MILITARY SERVICE INSTITUTION the present article which constitutes only *part* of his narrative of the operations of November 13, 1805, preceded by a mere cursory glance at those which brought the Grand Army to the gates of Vienna. Comparatively little of the material here published has ever seen print before.

†Fournier, Napoleon the First, p. 262, 265–267 and 366.

This "Army of the Coasts of the Ocean" was practiced in embarking and disembarking by means of a huge flotilla of flat-bottomed transports, and was drilled until "it became one of the most efficient fighting machines ever known in the history of the world, its discipline being perfect and its enthusiasm unbounded."* On May 18, 1804, the Senate offered to the First Consul, the title of "Emperor of the French," and on December 2d, in the cathedral of Nôtre Dame, he crowned himself in the presence of the Pope. In England, Addington had been succeeded (May, 1804) by the aggressive Pitt, who forthwith proceeded to organize the Third Coalition composed of England, Russia and Sweden, but it was not until July, 1805, that Austria, in view of her unpreparedness for war, could be induced to join against France. Napoleon had already begun to threaten her in Italy, where she was most vulnerable, thereby causing her to make a defensive alliance with Russia (November 6, 1804) but it was not until July, 1805, that the official "*Moniteur*" and other French newspapers began to publish articles against both Austria and Russia, which were unquestionably intended to provoke a war on the Continent while England was kept in constant dread of an invasion by the army at Boulogne. Indeed Napoleon's entire course of action during the first seven months of 1805 is thoroughly consistent with the policy outlined to Otto two years previously. In view of the inefficiency of his fleets, Napoleon undoubtedly did not consider the opportunity favorable to invade England, and accordingly, as he "always had two strings to his bow," turned his attention toward Austria and began with consummate skill to force her into war. On August 3d he demanded that she withdraw her troops in Italy to their garrisons in Hungary and Bohemia,

> "Otherwise if the troops continue to move and magazines to be formed, the Emperor will consider that Austria wants war and, in the impossibility of his sustaining his maritime war, he will march to pacify Austria completely."†

On the 7th and 12th these summons were reiterated with increasing pressure and on the 13th he wrote to Talleyrand:

> "My decision is made; I want to attack Austria and to be in Vienna before the month of November next, so as to meet the Russians if they should present themselves."‡

On the 23d, Marshal Berthier, the "Major-General" (Adjutant-

*Stephens, Revolutionary Europe, p. 242. Also Marmont, Mémoires, II, pp. 302-303.

†Napoleon, Correspondance, No. 9038, tome 11, pp. 56–57.

‡Ibid, Nos. 9055, 9068 and 9070.

General) and Minister of War, was instructed to order Marshal Bernadotte to assemble "the Army of Hanover" at Göttingen and for General Marmont to be prepared to move to Mayence with "the Army of Holland" upon the receipt of further orders,* and two days later the Emperor wrote Talleyrand:

"My decision is made; my movement is begun. On the 30th [Fructidor, *i. e.*, September 17th] I shall be in Germany with 200,000 men."†

On the 26th, the "Army of the Coasts of the Ocean," numbering 647 staff officers and 103,655 officers and men,‡ received the new name of "The Grand Army," and Marshal Berthier issued the orders which set 28,000 cavalry and 92,000 infantry§ in motion to the Rhine. These forces were supplemented by various divisions of heavy and light cavalry and dragoons scattered throughout the Empire and by the Imperial Guard from Pont-de-Briques (1552 men) and Paris, and all of them were ordered to rendezvous along the Rhine under the command of Marshal Prince Murat, in the absence of the Emperor. To mask this march and to continue to threaten England with invasion, Marshal Brune was left with a force composed of the third battalions of various regiments which were augmented until, in September, the "First Corps of the Reserve" numbered 785 officers, 15,456 men and 232 horses. The First Corps of the Grand Army (Marshal Bernadotte)‖ and the Second Corps (General Marmont)¶ were directed to Würzburg and Mayence** respectively, while the Seventh Corps (Marshal Augereau)†† was ordered to move from Brest to Alençon and thence to the Rhine at Hüningue and Neuf-Brisach.‡‡

On September 21st, Oudinot's division of grenadiers reached Strasburg, the headquarters of Prince Murat, and three days later the main body of the army had assembled on or near the Rhine between Strasburg and Mannheim (70 miles). On the 25th, the bulk of the Reserve Cavalry and the Fifth Corps crossed at Kehl and occupied the debouches of the Black

*Ibid, Nos. 9119 and 9120.

†Ibid, No. 9130.

‡Count of August 19, 1805. The reserve which was composed exclusively of cavalry, numbered additionally 245 officers and 28,808 men, and the detachment of the Imperial Guard, 1,552 men.

§Count of August 29th.

‖19,574 present with the colors.

¶20,922 present with the colors.

**Napoleon, Correspondance, Nos. 9184, 9137 and 9207.

††9,592 present with the colors.

‡‡Napoleon, Correspondance, Nos. 9158, 9284 and 9368.

Forest to mask the passage of the other corps and conceal the direction of the march across Würtemberg from the Austrian "Army of the Danube" under Field-Marshal-Lieutenant Baron Mack, which had quitted its camp at Wels on September 8th, invaded Bavaria and occupied the line of the Iller, resting on Ulm, with its right under Kienmayer thrown back along the Danube as far as Ingolstadt. In the rear of this screen the Third Corps crossed at Mannheim on the 26th, the Fourth and Sixth Corps at Rheinhausen (near Speyer) and Karlsruhe on the 27th, followed by the Imperial Guard at Kehl on the 30th and on November 1st by Napoleon, who had arrived at Strassburg from Paris on the 26th. The composition of "the Grand Army" was as follows:

			Officers.	Men.
General Staff			116	240
Imperial Guard (Marshal Bessières) 24 guns			314	5951
First Corps (Marshal Bernadotte)				
Staff	41	214		
Cavalry (General Kellermann)	174	2842		
First Division (General Rivaud)	263	6101		
Second Division (General Drouet)	268	6492		
Artillery and Engineers, 34 guns	43	1299	789	16948*
Second Corps (General Marmont).				
Staff	49	96		
Cavalry (General Lacoste)	109	1635		
First Division (General Boudet)	232	5121		
Second Divsion (General Grouchy)	237	5373		
Third Division (General Dumonceau)	271	5742		
Artillery and Engineers, 26 guns	76	1817	974	19784
Third Corps (Marshal Davout).				
Staff	49	92		
Cavalry (General Viallanes)	132	2037		
First Division (General Bisson)†	332	8459		
Second Division (General Friant)	315	7511		
Third Division (General Gudin)	271	7032		
Artillery and Engineers, 48 guns	45	1177	1144	26308
Fourth Corps (Marshal Soult).				
Staff	46	92		
Cavalry (General Margaron)	130	2039		
First Division (General Saint-Hilaire)	334	8858		
Second Division (General Vandamme)	334	8947		
Third Division (General Legrand)	355	8986		
Artillery and Engineers, 36 guns	59	1676	1258	30598

*On October 7th the Bavarian army under Lieutenant-General Baron Deroy united at Ellingen with Bernadotte. This army numbered 24,405 infantry, 2250 cavalry and 48 guns, thus making the total of the First Corps 44,392 and 82 guns.

†Bisson was wounded at Lambach (October 31st) and was supplanted by General Caffarelli one of Napoleon's aides-de-camp.

			Officers.	Men.
FIFTH CORPS (Marshal Lannes).				
Staff	27			
Cavalry (General Treillard)	128	2040		
First Division (General Oudinot)	250	6970		
Second Division (General Gazan)	322	6640		
Third Division (General Suchet)*	363	9139		
Artillery & Engineers, 34 guns	44	1367	1134	26156
SIXTH CORPS (Marshal Ney).				
Staff	44	96		
Cavalry (General Tilly)	144	2024		
First Division (General Dupont)	201	5149		
Second Division (General Loison)	296	7718		
Third Division (General Malher)	285	7316		
Artillery and Engineers, 30 guns	44	1090	1014	23393
SEVENTH CORPS (Marshal Augereau).				
Staff	43			
First Division (General Desjardins)	255	6571		
Second Division (General Maurice-Mathieu)	231	6037		
Artillery and Engineers, 24 guns	44	1269	573	13877
RESERVE CAVALRY (Marshal Prince Murat).				
Staff	24			
First Heavy Cavalry (General Nansouty)	150	3075		
Second Heavy Cavalry (General d'Hautpoul)	143	2056		
First Division of Dragoons (General Klein)	162	2464		
Second " " " (Genl. Walther)	150	2229		
Third " " " (Gen. Beaumont)	137	2232		
Fourth " " " (Genl. Bourcier)	157	2212		
Dismounted Dragoons (Gen. Baraguey-d'Hilliers)	187	5635		
Artillery and Engineers, 28 guns	27	975	1137	20878
GENERAL PARK AND RESERVE ARTILLERY. (General Saint-Laurent) 40 companies and 56 guns			144	3741
Grand Total			8467	187874†

It is not our purpose to follow here in detail the various movements which culminated at Ulm. Suffice to say that by a precision little short of marvelous, the lines of march were so calculated that this great army of 197,000 troops was concentrated on the 7th of October along or near the Danube within the narrow space between Donauwörth and Ingolstadt (32½ miles) and began to cross the river, driving Kienmayer back to Aichach and Munich, and next day not only routed Auffenberg's detachment at Wertingen but obtained complete possession of Mack's communications and effectually barred his retreat on Vienna. The wonderful maneuvers about Ulm

*Suchet originally belonged to the Fourth Corps but was attached to Lannes on October 9th.

†Count of September 23d. These identical figures will also be found in Dumas, *Précis des Événements militaires*, XII, pp. 321–332.

which—with the possible exception of "the Five Days' Campaign" ending with Eckmühl (April 22, 1809)—are the most masterful in the annals of war, terminated with the battle of Ulm on the 16th and on Sunday the 20th, Mack's army of 890 officers and 24,435 men defiled before Napoleon on the heights of the Michaelsberg, while far away beyond Nuremberg, Murat had captured or scattered the corps of Werneck, the Austrian Reserve Artillery, and all the troops which had broken out prior to Elchingen (October 14th) with the exception of a paltry few hundred cavalrymen accompanying the Archduke Ferdinand who barely escaped with his life.

Even before Mack defiled, part of Napoleon's army had begun its march toward the east, conformably to his intention to follow up his advantages already gained, and to rout the remaining Austrian forces before the Russian armies could come to their aid. On the 24th the army was concentrated on the Isar, whither Bernadotte and Davout had already preceded it,*and crossed the Inn at Wasserburg (Bernadotte and Marmont), Mühldorf (Murat, Davout, Soult and the Imperial Guard) and Schärding (Lannes), driving back the first Russian Army (46,405)† under General Count Kutusoff back along the northern road to Vienna and the Austrians under Merveldt along the southern road. The First Corps was directed to Salzburg‡ and the Second Corps to Laufen,§ while the vanguard continued through Braunau, Burghausen and Ried and the Fifth Corps toward Linz.‖ On the 31st, the Allies were encountered at Lambach, driven back from the Traun, and the bridge repaired under a heavy fire; Bernadotte was ordered up to Lambach,¶ followed by Marmont who moved through the valley of the Vöckla.** On November 2d the Reserve Cavalry entered Linz, and next day, with the support of the Fifth Corps, drove the Allies across the Enns but was delayed by the destruction of the bridge at Enns. The lack of intermediary roads caused Davout, Bernadotte and Marmont to be directed

**Registre de Berthier* (General Order Book of the Chief-of-Staff) IX, No. 124, pp. 117–118, and No. 135, p. 123.

†Mikhailovski-Danilevski, "Relation de la Campagne de 1805," pp. 48–49. The sixth column (8155 men) under Baron Rosen did not join Kutusoff until November 12th (pp. 151–152).

‡Berthier, No. 272, p. 202.

§*Ibid.* Nos. 306 and 307, p. 219.

‖*Ibid.*, No. 281, p. 207, and Napoleon to Murat, Braunau, October 31st, 11 A.M. Napoleon Corresp., No. 9442. 11, pp. 367–368.

¶Berthier, No. 330, p. 231.

***Ibid.* No. 298, p. 215.

on Steyer,* whither Merveldt had retrograded only to be driven out on the 4th by Davout. Murat and Lannes crossed the Enns on the 5th and after a hard fight repulsed the Russians from the heights of Strengberg and Amstetten, and two days later reached the celebrated Abbey of Moelk. The scarcity of available roads caused Bernadotte to be recalled to the *chaussée* along the south bank of the Danube† while Davout was pushed from Waidhofen through the difficult Styrian Alps toward Gaming, Annaberg and Lilienfeld for the purpose of turning the left of the Russians who were fully expected to make a determined stand at St. Poelten, the last strong defensive position covering Vienna.‡ The Second Corps was directed to Waidhofen and thence through Altenmarkt to Leoben § to cover the right against attacks from the Archduke Charles—who had fought Masséna at Caldiero in Italy on October 29th, 30th and 31st and, upon learning of the annihilation of Mack at Ulm, had begun his retreat toward Vienna—and the Archduke John in the Tyrol, as well as to establish communication with the Bavarian garrison left at Salzburg by Bernadotte and with the Sixth Corps, which had been retained at Ulm until October 27th by virtue of Mack's capitulation and then directed through Memmingen and Landsberg to Innsbruck,‖ where Marshal Ney had arrived on November 5th after capturing the forts of Leutasch and Scharnitz which formed part of the line of defense of the Tyrol fortified by the celebrated engineer, Count Chasteler.

Acting on the suggestions contained in reports from Murat (Neumarkt, October 23d) and Lannes (Efferding, November 2d), Napoleon, who had reached Linz on November 4th, gave orders two days later to organize the divisions of Dupont (1st division, Sixth Corps), Gazan (2nd division, Fifth Corps) and Dumonceau (3rd division, Second Corps)—which had bebecome "dislocated" from their proper corps—into an additional corps under the command of Marshal Mortier who was instructed to descend the left bank of the Danube, keeping himself always in the rear of the position occupied by Marshal Lannes on the southern bank.¶ On the 8th, Davout over-

Ibid., Nos. 333, 335, 342, 343 and 352, pp. 232, 233, 234, 237, 238 and 244.

†*Ibid.*, No. 364, p. 255.

‡*Ibid.*, No. 350, p. 243.

§*Ibid.*, Nos. 351 and 359, pp. 244 and 250–251.

‖*Ibid.*, Nos. 264, 297, 299, 318, 325, 330 and 334, pp. 200 213, 215–216, 226, 229–231 and 233

¶*Ibid.*, No. 356 pp. 247–248.

took Merveldt in the mountains at Mariazell, attacked and destroyed his corps, driving the remnants to Bruck where, additionally threatened by Marmont's advance on Leoben, he retreated into Hungary. The expected battle at St. Poelten did not take place, since the wily Kutusoff realized that he could make no serious opposition to the greatly superior numbers of the French, and therefore turned northward to Mautern where he crossed the Danube on the night of the 9th, burned the bridge behind him, and took up a strong position near Krems, his retreat masked by the Austrian troops under Kienmayer which remained on the Vienna *chaussée* but were attacked and driven back from the Traisen. On the 10th, Napoleon reached the Abbey of Moelk from Linz, while Murat, who had received no orders from the Imperial Headquarters since the 8th,* hesitated until he ascertained definitely from his detachments sent toward Mautern that the Russians were safely established on the left bank, and thereupon pushed forward to Sieghardskirchen and the Mauerbach, closely followed by Lannes' corps, in the rear of which Soult moved up to St. Poelten. On the opposite bank of the Danube, Mortier had reached Spitz with Gazan's division which additionally occupied the villages as far as Loiben, and came into contact with the Russian rear-guard. The Marshal had not seen fit to wait for Dupont and Dumonceau who were far in his rear at Marbach, and the First Division of Dragoons (Klein)—which had crossed at Linz on the 7th and accompanied him as far as Grein—had, through some unpardonable oversight, received no formal orders attaching it to Mortier's corps, and Klein had taken it upon himself to make a divergent march which brought him to Zwettel on the 10th. These facts were known through a report from Mortier, whose advance along the left bank could be distinctly seen from Moelk; the dangerous isolation of his leading division, marching into the very arms of the entire Russian army, was fully understood by Napoleon, and the precaution was taken to send Captain Colbert across the river to acquaint him with Kutusoff's position, the probability that his own advance would be opposed "and to warn him to march with caution." Being unmounted, Colbert could not overtake Mortier, but met with Captain Lapointe, one of the Marshal's aides-de-camp, who delivered the message and returned with a

*The Emperor's letter from Linz, November 8th, 8 P.M. Napoleon Corresp. No. 9465, 11, p. 387.

written acknowledgment that "the warning about General Kutusoff's march had reached him," signed by Mortier, which Colbert took back to the Emperor that same night.*

On the morning of the 11th Murat—still in default of any further orders from the Imperial Headquarters—continued his advance to Hütteldorf on the heels of Kienmayer; at 3 P. M. his troops were halted under the very walls of Vienna, detachments were sent to the Danube at Klosterneuburg above, and Ebersdorf below, the city in order to arrest all navigation, and furthermore, the various roads leading to Italy and Hungary were intercepted. Hard behind the Reserve Cavalry, the Fifth Corps (Marshal Lannes) followed to the outskirts of Schoenbrunn and farther in the rear, part of the Fourth Corps spent the night at Sieghardskirchen, while the Third Corps (Marshal Davout)—which had reached its destination on the preceding day—stood at Lilienfeld. Meanwhile, Mortier, disregarding the various warnings received and without waiting for Dupont and Dumonceau, continued to rush on toward Krems into the arms of Kutusoff who had been fully apprized by his spies of the isolation and numerical weakness of Gazan's division.† At 7 A. M. his vanguard encountered beyond Unter-Loiben the Russian skirmishers, followed by their supports, and soon it was involved in a general engagement. After seven hours of hard fighting Miloradowitch fell back, conformably to the plan to lure Mortier into the defile leading to Stein, while three other columns (about 15,000 men) under General Doktoroff moved through the mountains north of Dürrenstein and debouched from the Pfaffen Thal in his rear. About 4 o'clock Doktoroff reached the Danube and turned eastward against Gazan, but most fortunately Dupont had heard the sound of the firing and had forced his march to Spitz, closely followed by Dumonceau; his van had been pushed beyond Weissenkirchen and was soon engaged with the Russians issuing from the valley of the Pfaffen who, however, kept on to attack Gazan's rear, until the whole of Dupont's division came into action. Desperate as had been the previous fighting it paled into insignificance before the awful carnage that ensued. In the narrow defile at the foot of the château of Dürrenstein—which had been the prison of Richard Cœur-de-Lion upon his

*Unpublished memoirs of Édouard de Colbert, given by Thoumas, "Les Grands Cavaliers du Premier Empire," I, pp. 196–197.

†Two hundred and forty-five officers, 5588 men and 12 guns. Count of November 1st, given by Alombert, "Le Combat de Dürrenstein," pp. 38–39.

return from the Third Crusade (1192–1193)—four bodies of troops fought like demons in this modern Thermopylæ, lit up by the burning village of Loiben, where hundreds of wretched wounded were roasted alive. On the east, Miloradowitch hurled himself against Gazan's heroic troops who were making a last desperate effort to break through Doktoroff's columns, which were in turn furiously assailed by Dupont from the west. The attack of the last saved the day; for shortly after 6 o'clock, Doktoroff's men were seized with panic, broke and fled, thereby permitting Gazan's exhausted troops to effect their junction with their rescuers. The battle of Dürrenstein, which was fittingly termed by Napoleon "a day of massacre",* cost the Russians quite 4500 men, while Gazan's division lost 2118 men†—nearly half of its effective strength.

At 7 A. M. that day, Berthier had issued orders for Murat not to go beyond Purkersdorf, and fault was found for his having precipitated the army on Vienna "like children," thereby exposing Mortier to destruction; Davout was directed to proceed *via* Mœdling to Vienna, and two hours later Soult was instructed to "act according to circumstances during the course of to-day."‡ The roar of the guns in the direction of Dürrenstein was plainly audible at Moelk; at noon the sound had increased, and Napoleon became so apprehensive for Mortier's safety that he could no longer contain his irritability, and, giving orders for the Guard to follow instantly, galloped on to St. Poelten in order to be nearer the scene of fighting. There the noise of the firing was much more distinct and "his agitation redoubled; officers, aides-de-camp, everyone at hand, he sent in search of news."§ An irritated and very unjust reprimand was despatched to Murat for dragging the army on to Vienna‖ and Soult was ordered to arrest the advance of his corps, to proceed in person to Mautern, to communicate with Mortier and to make preparations to cross to his support,¶ but it was not until midnight that some very meager news was received from Thiard, one of the officers who had been sent to Mautern.

At 3 A. M. on the 12th, Bernadotte, whose corps had reached

*22e *Bulletin de la Grande Armée*, November 13th. Napoleon, Correspondance, No. 9476 pp. 399–401.

†Count of November 22d.

‡Berthier, Nos. 369, 370 and 371, pp. 258–259.

§*Mémoires du Général Comte de Ségur*, "*Un aide-de-camp de Napoléon*," I, p. 226.

‖Napoleon, Correspondance, No. 9470, 11, pp. 392–393.

¶Berthier, No. 372, p. 260.

Moelk, was ordered to halt there to get news about Mortier, and to prepare to cross the Danube; Saint-Hilaire (1st division)—who formed the rear of the Fourth Corps in front of St. Poelten—was retrograded to Mautern, Marshal Bessières was instructed to established guard-posts to Absdorf to facilitate the transmission of news, and Soult was ordered to obtain information about Mortier and get ready to cross.* At 6 o'clock Murat was notified of the "very hot engagement" at Krems and that "at the present moment* * * the main business is to cross the Danube in order to dislodge the Russians from Krems, by throwing ourselves in their rear," for which object he was instructed to enter Vienna at 10 A. M. next day and to try to get possession of the bridge there intact, otherwise to prepare to cross at Klosterneuburg or some other favorable point. About 11 o'clock, General Lemarois was sent to Mortier with a despatch from Berthier asking for news about himself and directing him to fall back toward Linz if necessary, and at noon, Murat was told that if he could cross the Danube quickly he would undoubtedly capture the Russians, while Bernadotte was again ordered to obtain news about Mortier, and to place his own corps in position to cross at any moment.† At 1 o'clock Thiard returned to St. Poelten with additional news and a sketch of the battle of the previous day, followed at 3 o'clock by one of Mortier's aides-de-camp who gave Napoleon a detailed account of the battle, which effectually dissipated his fears that Mortier had been annihilated and caused him to exclaim: "We owe a fine wax taper to the Virgin."‡ This officer was sent back with a despatch from Berthier notifying Mortier that he was to form "the corps of observation on the left bank," and instructing him to transport his wounded to the right bank, not to retreat to Linz except before greatly superior forces, for the reason that Murat was about to attack the Russian rear by way of Vienna, and to keep the Imperial Headquarters fully informed by means of the cordon of posts established from Moelk.§ Thoroughly reassured about Mortier, Napoleon then hastened the arrested movement on Vienna, and at 5 o'clock he wrote to Murat not to lose a moment; if the bridge at Vienna were found intact, to cross with his cavalry, Lannes' grenadiers and Suchet, followed by Legrand and

*Ibid, Nos. 374, 375, 376 and 377, pp. 260–263.
†Ibid, Nos. 378, 379, 380 and 381, pp. 264–268.
‡Roguet, "*Mémoires Militaires*," III, p. 166.
§Berthier, No. 382, p. 269.

Vandamme (Fourth Corps), and to order Davout to set out for Vienna at dawn next day.* Perfect confidence in the outcome of their plans is one of the dominant characteristics of great men, and Napoleon's conviction that the bridge at Vienna would not be destroyed is patent in the additional order sent at 11 P. M. to Murat "to try to surprise the passage of the bridge at daybreak to-morrow," and he was furthermore instructed to have his artillery ready to prevent its being burned, to enter Vienna, to send detachments along the roads to Moravia and Pressburg, to direct himself on Krems with Lannes' infantry, and to leave cavalry posts so as to communicate with the Emperor every three hours.† At 11.30 Napoleon wrote to Soult to remain near Mautern next morning until news had been obtained about the Russians, who were presumed to be retreating, but to overtake his corps before it entered Vienna, and notified him that Saint-Hilaire's division and the 8th Hussars (Franceschi) would remain behind until it were definitely known what Mortier and Kutusoff had done.‡ At midnight Berthier informed General Reille, the commandant at Linz, that the Russians might send detachments in his direction and that he ought to scrutinize them with care so as to protect the bridge at Linz, while Marmont—who had reached Leoben on the 10th—was notified that the French had entered Vienna and was ordered to ascertain the direction of the Archduke Charles' retreat and to transmit the news to Napoleon.§

On the night of the 12th, the "Grand Army" occupied the following positions: on the outskirts of Vienna were the Reserve Cavalry and the Fifth Corps, the former having detachments extending in a huge bow around the city from Tulln to Enzersdorf; on the south, Davout's cavalry had reached Mœdling, followed by the rest of the Third Corps, while along the Vienna *chaussée* were the divisions of Legrand and Vandamme near Sieghardskirchen, the Guard and the Imperial Headquarters at St. Poelten, and the First Corps extending back to Moelk and along the Danube; Marshal Soult stood near Mautern with his 1st division (Saint-Hilaire) and his cavalry (Margaron), and directly west of him was Mortier's corps which had been transported across the Danube to St. Lorenz, Arns-

*Napoleon, Correspondance, No. 9472, pp. 394–395.
†Berthier, No. 383, pp. 270–271.
‡Napoleon, Correspondance, No. 9473, pp. 395–396.
§Berthier, Nos. 384 and 385, pp. 271–272.

dorf and St. Johann, with the exception of some detachments left on the northern bank at Weissenkirchen and Spitz.

In order to understand intelligently the events of the 13th, we must remember that the day after Mack defiled at Ulm, Napoleon had permitted General Count Gyulai to proceed post-haste to Vienna for the purpose of detaching his sovereign from the Coalition; he had come to meet Napoleon at Linz on November 8th, but was not empowered to grant the terms demanded, and had accordingly been sent back to Francis, returning again to confer with Napoleon at St. Poelten on the 12th. Although these negotiations produced nothing definite and, indeed, served "rather to accelerate than to retard the onward march of the French army,"* their existence was known throughout both armies and peace was expected to be made at any moment.

THE SURPRISE OF THE TABOR BRIDGE AT VIENNA.

The morning of Wednesday, November 13th, dawned clear and cold. General Bertrand, who had been selected on account of his great skill as an engineer to assist Murat and to carry to him Napoleon's order (5 P. M.) to surprise the Danube bridge at daybreak,† had continued on from Sieghardskirchen to Hütteldorf, where he arrived during the early hours of the 13th and, having delivered the order to Murat, made haste to acquaint Napoleon with the information which he had gathered. His report was as follows:

"Hütteldorf, the 22d Brumaire, Year 14 (November 13, 1805). 4 A. M.

AIDE-DE-CAMP BERTRAND TO THE EMPEROR.

The officer who carried the maps which the Prince sent to Your Majesty‡ told me that the bridges at Vienna were cut; the Prince assures me (that they are) not, but the dispositions are made to burn them if we attempt to cross them. An Austrian corps of 8000 men is, they say, on the other side. * * *" §

The Prince is to negotiate for the Danube bridge this morning with M. d'Auersperg. If some battalions cross at Klosterneuburg, they will be able to facilitate its success. Perhaps Your Majesty has decided this question with M. Gyulai.

The Prince is extremely affected by the letter which Your Majesty wrote him day before yesterday.‖ He has lost courage, energy, activity. He recurrs every moment to that which has so profoundly affected him. I do not know, Sire, greater pain than that of displeas-

*Memoirs of the Baron de Ménéval, Vol. I, p. 395.

†Supra pp. 286-287.

‡With Murat's report of November 12th, 2 P. M.

§Auersperg's corps extending from Stammersdorf (Headquarters) to Korneuburg.

‖The reprimand of November 11th, 3 P. M., Supra p. 285.

ing Your Majesty, just as nothing flatters more than to obtain your approbation. The Prince experiences this thoroughly to-day. It is certain that he cannot serve Your Majesty as he had previously done. He has not his head with him. * * * BERTRAND."*

Notwithstanding the paralytic effect which Napoleon's reprimand had had upon the habitually gallant and impetuous Murat, his operations for the day culminated in a most remarkable achievement. Sebastiani (1st brigade, Second Dragoons) was instructed to proceed at once to Hütteldorf and the 16th Chasseurs (Milhaud) to Tulln, and orders were issued for the Reserve Cavalry and the Fifth Corps to assemble under the walls of Vienna at 9 o'clock. Preparatory to his entry into the city, the Prince sent General Bertrand, accompanied by General Mossel, chief of artillery of the Reserve Cavalry, and Murat's own aide-de-camp Major Lanusse, to make a reconnaissance to the bridge and to endeavor to get possession of it by surprise or ruse, with the support of Treillard (9th and 10th Hussars, Fifth Corps) and Sebastiani (10th and 22nd Dragoons) and three guns.† To assemble the two corps naturally took some little time, so that it was not until 11 o'clock that Murat and Marshal Lannes, at the head of their respective troops, march into, and took possession of Vienna. Napoleon had realized the dream of Marshal Villars, formed in another age—a dream the accomplishment of which would have prevented the disasters of Blenheim and Ramillies‡—and the Grand Army was the first hostile force to enter the capital of Austria since the days of Ottokar of Bohemia (1251–1278).

Built in a superb basin formed by the majestic Danube sweeping in a broad bow at its feet, and enclosed on the southeast by the distant Leitha Mountains, on the southwest by the rugged Alps of the Steyermark whose spurs, prolonged northward, form the Wiener Wald (Forest of Vienna) and terminate abruptly in the precipitous slopes of the picturesque Kahlenberg and Leopoldsberg§ at the very edge of this river of blue,

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*Only the third paragraph of this report is given by Alombert, "*Le Combat de Dürrenstein*," p. 178, foot-note 1.

†Murat's report of 9 P.M. (*infra.*) This account differs slightly from that given by the *March Journal of the Reserve Cavalry.*

‡Compare O'Connor Morris, "Napoleon," p. 174.

§It was in the church here, built on the site of an ancient castle, that the generals of the allied army under Count Stahremberg, John Sobieski and the Margrave Lewis of Baden offered their prayers for sucess against the vast Turkish forces under the Grand Vizier Kara Mustapha in the battle which proved the Tours of the East (September 3, 1683).

across which the vine-clad Bisamberg* here confines it in a narrow defile and extending away to the north, merges into the distant mountains of Moravia which encloses the vast plain of the March (Marchfeld),† Vienna yields to but few capitals in the world in the beauty and salubrity of its situation. This ancient city, long the seat of the Holy Roman Empire, was for centuries a most important military post, and constituted the buffer of Christendom against the frequent incursions of the Turks. Its fortifications, planned in the thirteenth century by Ottokar of Bohemia, remained the boundaries of the inner city until 1857, when the ramparts and *glacis* were demolished to make room for the splendid Ring Strasse, architecturally one of the finest streets in Europe. These defenses, flanked by strong bastions even on the northern side next to the Danube and capable of great resistance, enclosed the inner city which in 1805 contained about 100,000 inhabitants, while outside the broad *glacis* spread the immense suburbs that embraced nearly double the population of the inner city and were in turn confined by entrenched lines consisting of a rampart twelve feet high and an insignificant fosse‡ constructed as late as 1704 on the trace of older lines, as a protection against the Hungarians under Francis Rakoczy.§ In its general architectural aspect Vienna cannot compare with such capitals as Rome, Paris or London; its principal value lay in its great importance as a strategic position commanding the only bridge over the Danube between Mautern and Pressburg and containing by far the most important military depot of the Austrian monarchy, crammed with vast stores of powder, shot, 500 siege guns, 1500 field pieces and more than 100,000 small arms. With the exception of a few in England, it was unquestionably the largest arsenal in Europe and its immense supplies were quite enough to provide forces numerically equal to the French army with sufficient material "to make four campaigns."¶ Such was the prize, the brightest jewel in the Aus-

*From these heights the anxious and beleagured Viennese first discerned in the setting sun the glittering lances of Sobieski's relieving force.

†In this vast agricultural plain, dotted with picturesque white villages, lie Aspern—where four years later the intrepid Lannes was killed (May 21st)—Essling—where Masséna won his princely title—and Wagram—where Napoleon defeated the Archduke Charles in the bloody battle of July 6th.

‡Known to the Viennese as the Linien-Wall and the Linien-Graben.

§These lines were not entirely leveled until 1890.

‖In 1805 its military importance was greatly enhanced by the destruction of the bridge at Mautern.

¶23d Bulletin, November 14th, Napoleon, Correspondance No. 9483, 11, pp. 405–406.

trian crown, which the Emperor Francis was forced to allow Napoleon's troops to occupy without the slightest resistance.

The reconnoitering force which Murat had sent under General Bertrand to surprise the bridge, advanced rapidly through the city but, upon issuing from the suburb of Leopoldsdorf which leads to the bridge, it encountered an Austrian cavalry post stationed at the barrier known as the "Gatterthor." It had been preceded by two French officers disguised as civilians who had driven up about 11 o'clock, and upon announcing that they were "magisterial commissioners," Lieutenant Nicolaus Herbay, the officer commanding the post, came out to meet them. Grouping themselves around him, they proceeded to engage him in conversation, in the course of which they imparted to him the "secret" communication that Prince Murat would immediately come to the bridge since he greatly desired to confer with Prince Auersperg. Herbay had scarcely despatched an orderly to carry this important news to his superior, Col. Freiherr Geringer von Edenberg, than a second carriage drove up in which was seated another man, also in civilian dress who, under the pretext of an important secret mission, demanded to be admitted. In spite of his open threats, Herbay declined most positively to be held responsible for any consequences resulting from his refusal either to admit this person or to go himself out to the carriage. After a long and fruitless altercation, the civilian finally left his carriage, and walking over to the lattice whispered to Herbay "that Count Wrbna begged Prince Auersperg to come with greatest haste." This report was also sent to Colonel Geringer at the center bridge.

The exact purpose of these emissaries, particularly the last, has never been fully explained, but it is highly probable that they wished to divert the attention of the Austrian officers on guard and to decoy them away from the gate in order that it might be found open at the proper moment. Thus far they had been effectually thwarted, but Lieutenant Herbay was still occupied in despatching the last request, when he was again summoned to the gate where he found several French generals, one of whom asked him in German whether Prince Auersperg would soon arrive, and furthermore expressed a desire to talk with him in the meantime. While Herbay turned to give instructions to an orderly, two soldiers, who had accompanied the French officers, made an attempt to break

down the gate but the Austrian hussars nearest it did not mistake their purpose and, pursuant to orders, fired off their carbines and immediately galloped back toward the bridge, followed by the rest of the detachment. At that instant Colonel Geringer arrived in response to the first despatch and, after a brief conference, instructed Herbay to ride at full speed to Stammersdorf to make a personal report of the incident to Auersperg, while he continued on himself to the Gatterthor.

The French had, meanwhile, kept close behind the Austrian detachment, and at the entrance to the bridge, Geringer met the French officers who complained loudly that they had been fired upon when nothing at all hostile was intended. General Bertrand introduced himself as Napoleon's aide-de-camp and announced "That Field-Marshal-Lieutenant Gyulai had made a definite agreement with His Majesty, the Emperor of the French, by virtue of which no further hostility should be permitted between the troops of both sides; that they were working eagerly for peace which had almost been concluded and for this reason the bridge over the Danube was not to be set on fire—if it were, Field-Marshal-Lieutenant Gyulai and Count Wrbna would have to answer with their heads." To this Geringer merely replied "that he could put reliance in the correctness of all these declarations only when Field-Marshal-Lieutenant Gyulai had assured him so in writing," and this guarded answer drew a pledge of his word of honor as to its truth from General Bertrand who added with evident irritation "that the most conclusive assurance was that he had come directly from the Emperor's headquarters to transmit the news in person to Prince Auersperg with whom Prince Murat also wished to speak." Nevertheless, Geringer delayed admitting the French and begged Bertrand to wait for the arrival of Auersperg, who had already been notified; but Bertrand merely retorted "that Geringer would have to answer with his head for the lives of Gyulai and Wrbna which were pledged, and that the entire responsibility would fall upon him in case hostilities should be resumed, no peace be concluded and incalculable harm come to the monarchy as a result of the destruction of the bridge."

So imperious was Bertrand's manner and so probable the truth of his statements, particularly when supported by his word of honor, that he succeeded in imposing his will completely upon the Austrian. Geringer seems to have realized that the French desired to get possession of the bridge unop-

posed, and that as a soldier, bound by military orders alone, he had nothing to do with political events, but the instructions which he had received in the preceding twenty-four hours had been so contradictory and uncertain that he found himself placed in a very unenviable predicament. Bertrand's positive assurances had rapidly undermined his firm resolve; his opposition soon gave way before the irrefutable arguments of the French aide-de-camp who appeared to be clothed with full authority in that he had been despatched by Napoleon himself, and, furthermore, Geringer was far from desirous of shouldering all the responsibility which would inevitably fall upon him if the destruction of the bridge caused the negotiations for peace to miscarry. To avoid grappling with either horn of his dilemma, Geringer hit upon the middle course by which he satisfied his own conscience, and accordingly granted permission for Bertrand, accompanied by three other officers, to cross to the left bank for the purpose of further conference with Prince Auersperg, but he expressly stipulated "that no one else should advance farther onto the bridge until he had himself notified them that the affair had been finally settled." Meanwhile, the French hussars had managed to prevent an Austrian soldier at the approach to the bridge from setting fire to the line of combustibles strewn throughout its entire length, but so decided was Geringer's announcement and so evident were the thorough preparations made for its destruction, that Bertrand wisely recognized that any farther advance at that time would imperil the safety of the bridge and completely foil his own mission. He therefore ordered Sebastiani and Treillard to halt their troops at the approach on the right bank, and accompanied by Lanusse and Mossel, rode forward toward Zwischenbrücken with Colonel Geringer.

[TO BE CONTINUED.]

THE ARMY CHAPLAIN: HIS WORK AND WORTH.

By Chaplain C. C. BATEMAN, U. S. Army.

THE qualities and services of the army chaplain are here recounted by suggestion rather than in detail.

Propriety prompts the author to write of his brethren's work and worth while withholding personal mention of individuals by name.

Every entry made herein to the credit of the army chaplain may be traced to some member of the corps serving on the active list within the year 1904. That which is best in attributes and achievements of all may be understood to constitute the characteristics and service of the composite ideal of this article.

I am indebted quite as much to my juniors as to my seniors for valuable object-lessons and examples, Both have taught me much.

THE CHAPLAIN AS A MAN.

A substantial physical basis is essential to success among armed men, since good health is a prime requisite to sustained effort in any exacting sphere of homan endeavor.

The chaplain is judged first and last in the army as a man.

His manliness is the key to every situation.

He knows what it means to be possessed of a full complement of manhood's capacities and powers.

The weak, the timid or the effeminate have no place here.

A true man offers no apology for his existence, seeks no sympathy for his lot, spurns the vice of self-pity and looks the world squarely in the face.

"A fellow feeling makes one wondrous kind" and a soldier will "tie to the chaplain" not because of the latter's creed, but because he fills a man's position in a manly way. Failure here is failure everywhere.

THE CHAPLAIN AS A MINISTER.

Having won his way as a man, his message has taken unto itself flesh and is interpreted in the light of the preacher's personality.

The soldier may not be given to habitual reading of the Bible or Prayer-book, *but he reads the chaplain most religiously.*

This judgment is rarely harsh, but when so, a reason may be sought, and usually found.

The chaplain is soon conscious that if he rests upon the meager suggestions afforded by the Army Regulations as guides to the performance of his duties, small, indeed, will be his service.

He is accordingly alive to the personal needs of his peculiar parish, composed of men of every shade of religious belief.

Occupying, as he does, a midway position between the military authority and the private soldier, he forgets that he himself is an officer, while he regards his surroundings in the broader relationship of the shepherd.

If he finds his field quite different from the pastorate in which he made unconscious preparation for his life-work in the army, the readjustment has afforded a happy lesson of enlarged experience.

The minister has come into the service in the vigorous years, from, it may be, an influential parish, where his standing and attainments were fully recognized and appreciated.

He cannot be over forty years of age when appointed, and was necessarily engaged in the active work of a pastor or priest at the time of his appointment.

He is, therefore, not too old to accommodate himself to the requirements of an entirely new field.

If there be in the man's make-up something of the soldier he will find little difficulty in doing this.

The chaplain finds himself thrown largely upon his own resources.

He may be assigned to a station where almost no facilities exist for his work.

These necessary adjuncts he must somehow call into being.

The attitude of the commanding officer is generally cooperative.

A room is set apart in some building or "shack" and dignified by the name of "chapel."

The children of the community or military colony are gathered into Sunday-school and the means to buy books and papers will come if the chaplain "hustles while he waits."

There are no public funds available for these purposes.

In the active field the chaplain gathers his congregation at the sound of "Church Call" on a grassy side-hill, or under a gen-

erous shade while the solitudes re-echo the sweet tones of the portable harmonium—a treasured companion in his travels.

Among the friends of the chaplain corps I would place first, The Women's Army and Navy League of Washington, D. C., and second, the International Committee of the Young Men's Christian Association, of New York City.

These have made grants of organs, hymn-books, literature, and otherwise contributed to the efficiency of the chaplain.

THE CHAPLAIN AS AN EDUCATOR.

It seems quite natural that a soldier should turn to a respected chaplain when in quest of knowledge: quite as naturally, indeed as that he should come to the chaplain for spiritual comfort and help.

My own observation leads me to the view that the "seasoned regular" seeks information more often than consolation.

Not a few officers of the line who have risen from the ranks during the last decade were helped over hard places in their academic studies by the chaplain, who cheerfully reviewed forgotten subjects that he might qualify himself for this assistance.

It is, of course, well known that the post schools for enlisted men are under the superintendence of chaplains.

Here a real plesaure may be derived from a service so distinctly practical and beneficial to men who in civil life were, by circumstances, deprived of the advantages of a common-school education.

Unsatisfactory as the work often is in a post school, because of the constantly recurring military duties, the fact remains that the illiterate man may obtain an education in the army if he will.

But it is not alone in his sanctum or in his schoolroom that the chaplain may widen the mental vision of his flock.

The lecture platform is his, and, summoning to his aid the stereopticon and phonograph, he becomes at once the radiating center of ideas and instructive entertainments.

His connection with the regimental or post library, singularly enough, makes him usually post treasurer, in charge of the bakery, and possibly his prominence invites him to a place on boards of survey, where he may help "fix responsibility" for conditions for which he is likely to be in profound and blissful ignorance.

Perhaps his well-known willingness to do anything within the bounds of reason or propriety makes of him, at times, a man of convenience when he should be concerned with matters directly in the line of his profession.

He successfully operates in many places post exchanges; not, I fancy, because such business properly belongs to him, but because, like a good soldier, he is ready and willing to do his part as others may suggest his part to him.

The position of camp postmaster he finds quite to his hand, since he knows many men by name.

THE CHAPLAIN AS COUNSEL FOR THE ACCUSED.

I am aware that there is dissent from this anomalous service on the part of certain chaplains.

The objections to it are well taken in notable cases.

Some commanding officers are loath to detail or permit a chaplain to act as counsel before courts-martial.

There are unquestionably cases where the testimony is of such a revolting description as to completely upset a minister's mind when preparations should be in order for the sacred service of the Sabbath day.

Personally, I have never been able to fathom the wisdom which requires a witness to testify to the exact unprintable terms used by the accused in an altercation about the barracks.

Why testimony to the effect that the accused used vulgar, indecent, profane and abusive language cannot be taken by a court-martial as sufficient is beyond my comprehension.

But apart from this leprosy of speech permitted and required of witnesses before courts-martial, the position of counsel offers some rare opportunities for gentle appeal, without "preaching," to the wayward soldier which never would otherwise be found.

To do all for the accused that the law allows may not be all that a chaplain can do or ought to do.

There is a mild pleasure and excitement in preparing a good case and fighting the prosecution to the end.

The law and evidence open up a wide realm, and it seem likely that having once invaded this domain, the chaplain will be regarded as "standing counsel" when no one else is available for such duty.

VARIED ACHIEVEMENTS.

A senior chaplain was awarded the war department medal of honor for ministering to wounded men under a heavy fire in Cuba.

A junior was recommended for a like award for a like service in Mindanao.

A chaplain originated the system of indentification of the dead on the field and organized the work of the great morgue at Manila.

A chaplain brought about unofficially the surrender of a body of men in armed insurrection against the authority of the United States.

A chaplain suggested that soldiers, during the progress of war, be permitted to mail their letters and have the same forwarded to any domestic point without prepaid postage.

A chaplain asked that he be relieved of further duty with the regiment that he might give his entire time to those who were down with the yellow fever.

A chaplain sustained the courage and hope of his associates when military camps were being ravaged by cholera.

A chaplain stood close to the surgeon at Siboney, El Caney and San Juan Hill.

A chaplain "was in the right place at the right time" before the gates of Pekin.

A chaplain mollified the fanatical hatred of Moro priests and averted probable bloodshed.

A chaplain rendered signal service in adjudicating the vexing questions of Church and State in Porto Rico and the Philippines.

In times of stress the army chaplain has volunteered for the most arduous service, not shrinking from the prospect of personal encounter during armed engagements.

It is the present, living, active chaplain of our regular army who has been tried literally in the fire and has proved his quality as a man, a minister and a soldier.

With pencil and note-book in hand, he has gathered, while on the march, information not only of value to his commander, but to his countrymen at large.

I will not say that the army chaplain is worth all he costs, for I would not admit that much of the service he has rendered can be reckoned as possessing a value in dollars and cents.

When personal effort, wholly moral and intellectual, when heart-to-heart contact with earnest men of a perilous calling, can be reduced to a chemical analysis and indicated by an algebraic formula; when devotion to the well-being of others can be measured by the yard-stick, then, and not until then, will I admit that the worth of the army chaplain may be estimated in words and figures.

There can be no sort of doubt that the chaplains' corps has grown upon the respect and appreciative regard of the army and the country since our war with Spain.

The fixing of the chaplain's status and the pronounced encouragement extended to him by the line, to which he is best known and by which he is most closely observed, are calculated to invest his position with dignity and render him still more efficient.

At no previous period of our history has the chaplain of the regular establishment been so thoroughly identified with the military service or so heartily commended by his superiors.



THE CALIBER OF THE REVOLVER.

By Major ROBERT L. BULLARD, 28th Infantry.

WHATEVER, theoretically, may be its capabilities and uses, actual service has found for the revolver but one practical use which justifies its retention and covers the trouble of its carrying in war, namely, *to destroy suddenly and effectively, to kill dead, an enemy threatening at close quarters, within, say, twenty paces.* This is its one practical, paramount use, and to this purpose its caliber should conform. This is the use of which in the days of the wild West developed and made the revolver pre-eminently the weapon of the fighting American, and made it, let me say, not of toy caliber, but a real "gun," which means a .45 and nothing else.

This being and having always been the revolver's only real justification, it seems most strange that without any change in its purpose there should have been in its building any change which, like the lessening of its caliber, should reduce its capability of fulfilling that purpose. It is probably due to that spirit of humanity which in long peace begins to hope that war can be made without killing people. At any rate, the caliber is reduced, and thus have we put at the mercy of his enemy, most often now a savage, every soldier of ours who in a real crisis relies upon his revolver to save him.

A revolver is not fit for hand-to-hand encounter, and it is practically useless for fighting beyond twenty paces. For the first, anything or nothing is better—a saber, a bayonet or even a club—and to-day the soldier of every branch is amply armed therefor. For the second, his hope must be in other things, the rifle or carbine; for the revolver does not in practice save him. In such a fight, if he have only a revolver, then must he, and in reality he does, always voluntarily or involuntarily make distance fast one way or the other, toward or from his enemy. He has got to do so in order to make his own arm effective against the enemy or the enemy's ineffective against him. This is experience. The revolver is, then, an arm for close quarters, and for close quarters only. Now at close quarters you must kill your enemy and kill him quick, or he will do as

much for you. It is not enough simply to knock him down, not enough to wound, even to wound him badly; because, over the souls of men fighting and falling at close quarters, even wounded unto death, but not dead, comes a fierce rage and thirst of revenge, an awful desire to kill and sweep their slayers with them into eternity, and often they do it. It is but the crook of a finger, perhaps. Whenever, therefore, we really come to a fight with the revolver, it is necessary to have a revolver that will kill. This the .38 does not.

No better test of our revolver's worth and the fitness of its caliber for the purpose for which a revolver has been provided can be had or ever has been had than in its recent use by our troops fighting in the Moro country. When they fight, Moros fight suddenly at close quarters in the revolver's domain of twenty paces. It is a damning comment on the caliber of the .38 that every officer, man and camp-follower in the regiments which have served against Moros after a first experience laid aside the .38 wherever he could by hook or crook raise a bigger "gun," generally the old .45. Indeed, a department commander who, by constant personal part with troops in the field, knew the need, provided and issued to officers and men as many as he could get of .45 revolvers, gladly taking even the old style, slow-working, single-action ones.

The writer's own experience and observation record many miserable failures of the .38 and its bullet to do what we have a right to expect of a revolver, together with many notable examples of the contrary in the caliber which we have abandoned for the .38.

At San Cristobal Bridge, January 1, 1900, our men ran a small bunch of half a dozen insurgents, as it were, against and over me alone in concealment a little ahead of the men. On they came like a flock of frightened sheep, a machine-gun cracking behind them. Almost poking them in the ribs, I emptied my .38 into them. Never a man hesitated, stopped or fell; never a man seemed so much as to flinch or start at my shots. They never noticed me. I might as well have been working a bean-shooter on them. That .38 never hurt a soul of them. It was probably on account of this kindly treatment that they had the consideration not to take me along with them, as they easily could have done, had they felt so inclined, so helpless and armless was I.

No great while after this in a sudden encounter with insur-

gents at close quarters, an ordinary pistol-shot of my command knocked down and out three out of a bunch of five insurgents with the six shots, rapidly delivered, from his revolver—his .45 revolver.

In a fight by boat last year with the Sultan of Toros on Lake Lanao I suddenly heard a death groan and a fearful struggle behind me. I turned to find in my boat a hostile Moro, kris in hand and the awful fire of murder blazing in his eye. One stroke of his deadly knife had half severed the head from the body of my soldier steersman, and the flashing blade was raining blows into the bottom of the boat at the prostrate writhing form and flying legs of the soldier oarsman who had occupied the place between me and the steersman. The latter, his head fallen sadly forward on his breast, sat bolt upright in his place, dying. Too fast to tell I poured four shots into the mad Moro, but to my consternation they seemed wholly, wholly without effect; and in desperation and bitterness of heart, cursing such an arm and the fate that had given it to the soldier to fail him in his hour of need, I spared the last two shots, springing forward in the last hope of shoving the revolver's muzzle against him, and so to *blow* out his brains or heart. In that hundredth part of an instant he stooped to clear a bamboo bow that looped the narrow boat over the body of the fallen oarsman; I thrust my muzzle against the top of his close-cropped head and fired. Then at last he felt the .38 and sank forward upon his own weapon and the legs of the soldier whose head was against my feet.

A cannon's shot from this place another day in a fight with Moros this happened: A Moro who had just surrendered in our assault on a Moro fort, suddenly snatched a dagger from his clothing and sprang upon a soldier, stabbing with that invisible speed with which only a Moro can work a knife. He reached the soldier's bowels with his very first stroke, but he never made another. A single shot from the .45 of an officer near by dashed him into eternity as if by a million volts of electricity. He never so much as kicked, he hardly quivered. That .45 with one shot saved this soldier's life. Would a .38 have done it? Who that has used it thinks so?

At Paglima Hassan's *cotta*, Jolo, in November of last year, we fought for half a mile through a thick swamp. From their hiding in the bush, and behind boulders and trees at close quarters, fifteen or twenty paces, Moros, with the mad heroism

with which they sometimes fight, repeatedly rushed our men—to die. Three such were killed by an excellent, cool pistol-shot; but, first, it took twelve shots to do it—four per man; second, it was found that each had to be hit in the heart before he was stopped; and, finally, it was a special bullet used. Now, doesn't it seem a little straining, to say the least, to require a soldier in deadly, almost hand-to-hand combat to fire four shots to save himself when he might do it with one? Or a little unreasonable to require him to provide his own special bullets for such occasions? Or introducing unnecessary doubt as to the outcome to require him under such conditions to hit his enemy in just one little spot, the head or the heart? In this last I mean no joke. Only the day before the incident I have just described, I was riding behind the advance-guard along a narrow trail lined with the tall *cogon* grass of the Philippines. Happening to glance back, I saw slipping up behind me a hostile Moro armed with a spear and a meat axe they call a *barong*. As I turned, he plunged into the grass, where he was followed by myself and half a dozen soldiers. For a minute we lost him. While the men afoot were breaking through the thick tangled giant grass, I saw and plunged forward after him on my horse into a small opening, firing from my .38 as I closed in on him shot after shot, which, it seemed to me, ought surely to have brought him down, but did not. He never appeared to notice them, and seeing that he would escape, I dashed right up to him. As he whirled upon me then with raised spear, I shot him with my last round under the left arm. At the crack of the revolver he fell as if struck down by some unseen mighty hand, and the men behind me, now on the edge of the opening, cried out at the sight, "That got him, that got him!" No such thing. He bounded from the earth like an acrobat from a spring mattress. My revolver was empty; I was helpless. The Moro was wonderfully alive and the spear play seemed about to begin again, when the swish of a shower of Krag bullets past me caught him and ended it. I have his meat axe, thanks to the Krags, not to the .38, which though it had hit, had not hurt.

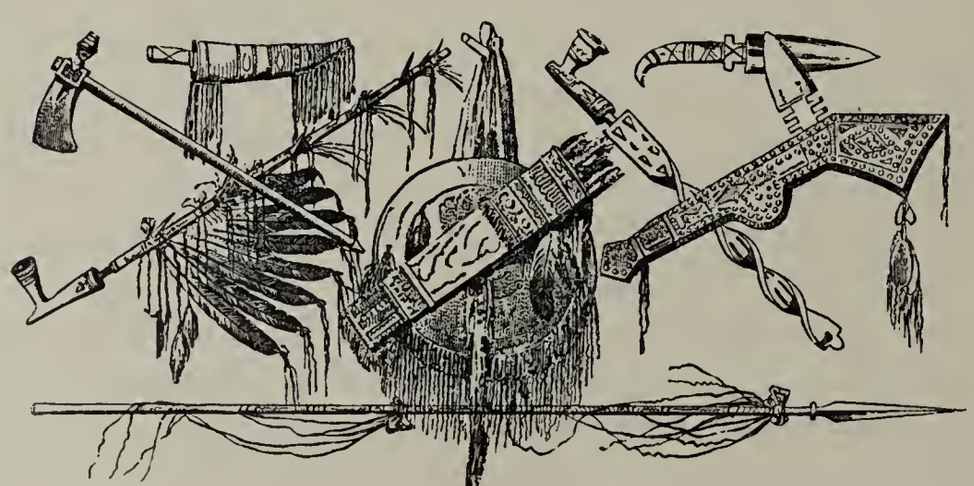
Contrast this:

In Jolo a contract surgeon, mounted, went with my skirmish line in an attack upon Moros in position on a hill. Suddenly there sprang from behind a boulder a Moro in the act of hurling ing a spear at a soldier at close quarters. The doctor fired; the

spear flew, but missed its good aim, for trembling and death were already in the arm that sped it. With one shot of his .45 the doctor had killed the Moro in the instant between aiming and throwing. Here was a typical use with beautiful fitness of the revolver for the purpose for which a revolver is intended. The .45 hadn't failed like my .38.

Different is this last experience: An officer, .38 in hand, rushed with me in pursuit of a datto who had just slashed at a sergeant and escaped. He headed off the Moro, who hid in the jungle, and when the officer came near, rushed him at close quarters, head down and bellowing like a mad bull, kris flying. In an instant the officer fired three shots, the last just as the Moro reached and struck him. Other shots were then fired by men near, and the datto died at the officer's feet, but not until he had with his awful kris inflicted wounds upon the officer that left this poor fellow at death's door. "I deserve it, major," he said bitterly; "I deserve it for bringing out this .38."

Give us, I say, a gun that will kill, not a pepper-box which, when we use it, only so irritates an enemy that he comes and chops us up with a knife.



THE UNITED STATES VERSUS SPAIN.*

By an OPTIMIST.

Translated by Captain JAMES CANBY, Paymaster, U. S. A., for the Second Division General Staff.

FOR ages Spain has demonstrated her valor, and now, without fear of being accused of cowardice, can well afford to carry to the extreme moderation and prudence, and seek support and aid against an enemy confessedly stronger than herself, and which proposes to take advantage of that strength. Moreover, it is humane and very advantageous to civilization to avoid as far as possible the spilling of blood, the havoc, the paralization of commerce, and the great loss of property that a war brings with it. No one would blame us for thus avoiding this war, maintaining our sovereign independence, and preserving intact, without resort to arms, thanks to the support of the great powers, the integrity of our territory.

It would be an overwhelming misfortune if after taking this step no one should come to our assistance and we should remain as isolated as we now are. Against this contingency it behooves us to have our strength as it were stored up and ready, and to make a vigorous manifestation of it with manly serenity; facing dauntlessly the dangers, trusting in God and our right, and combating single-handed against the United States even if they were a thousand times more powerful than they are, without despairing of success or of making them pay dearly at least.

The past now has no remedy and of the past I would not speak did it not contain a lesson and a warning for the future.

It is necessary to acknowledge it. In the isolation of Spain there is no small blame on our part. The various governments and parties in power in Spain for many years have inclined to this isolation, moved by a mistaken prudence and by an ill-judged conception of the importance and worth of the nation whose destinies they directed. There are obligations of which Spain can not be unmindful, and there are aspirations and aims that the soul of the nation can not smother in its bosom,

*Continued from the November number of this Journal.

even if it strengthens itself by smothering them. The obligations are preservation of the Antilles and the archipelagos that we possess in the Pacific. The aspirations, providentially or fatally imposed by our history itself, are that no one rules in Morocco without our consent; that we constantly bring closer our relations with the Portuguese, and that we preserve, now that the political ties are severed, a unity of civilization, language and caste between the Peninsula and those that were once its colonies but are now independent States, striving and trying with all earnestness and interest that our prosperity and success increase that of the Spanish-American Republics, in which we feel a paternal pride that we would not see made light of or abated.

With such views and aims the seclusion of Spain is impossible; the solicitude of her rulers not to expose her by engaging her in ventures has exposed her more by leaving her isolated. So that our excessive protective policy has contributed to alienate the good will, or at least to cool the fondness, that some of the nations of the first class ought to feel for us. The example of other nations, who seeking alliances and every venture have acquired advantages apparently unattainable and the delirium of a dream, has not served us as a stimulus. Thus Piedmont, conquered and ruinously taxed after the battle of Novara, has come to enjoy that for which it sought for many years in vain, unity with Italy, only briefly attained under the sway of the barbarian king Teodorico (Theodoric). Austria, in order to have support and alliance, has united herself in close friendship with the two peoples that most harassed her; with the Italians who succeeded in robbing her of the Milanese and the Venetians, and with the Prussians, who conquered her and despoiled her of supremacy in Germany. France herself, putting aside ancient enmities, seeks with sagacious and constant solicitude the friendship of the Russians, praising and flattering them, and making even the freaks and eccentricities of their writers the fashion. Perhaps Spain may be the only nation that from a desire to keep free from entanglements has shunned all friendships and remains alone. If this is so, if no one comes to her assistance, she will be severely punished by finding herself so cruelly abandoned.

Luckily, even without depending upon alliances that we have not sought nor upon sympathies that we have not ex-

erted ourselves to create or encourage, we still have left some hope that the great powers of Europe may place themselves on our side, may incline toward us and be induced to acknowledge our right. It would be strange if they pass in silence the presumptuous effrontery with which the "Yankee" Senators and Representatives have constituted themselves a tribunal of mankind, high-priests of philanthropy and culture, reproving and anathematizing the conduct of a sovereign nation in its internal government, pointing to its failure, and trying to lay upon it infamous punishments, to dismember it at their caprice and to rob it of part of its possessions. Still more hateful and ridiculous is this pretension on noting what is upheld in the idiotic Monroe Doctrine. What is rationally meant that America must be for Americans? Where are the Americans to whom America by all rights belongs? Those that are left alive the "Yankees" have shut in like wild bulls in a pasture or like wild boars in a pen. Aside from this America is, and will continue to be for many years, of the Europeans. The religion, the science, the language that is spoken and written, is all there from Europe. If there have been there some illustrious historians, some inspired poets, some mediocre thinkers, they have written in English, Portuguese or Spanish; if they have invented anything it has not been of sufficient importance either to change the course or to accelerate the speed and increase the vigor and firmness with which humanity advances on its way elevating itself to higher spheres. All that the "Yankees" have thought, invented or written, is only a brilliant appendix, but nothing more than an appendix, of English civilization. It may be a very splendid tail, but it is only a tail.

The nucleus, the focus, the shining center, the prime motive that still moves humanity on its way is in Europe and has not passed to America, nor is there danger that it may pass. The torch of wisdom and of intelligence, the authority of scholastic degree, the helm of the ship, the center of mental supremacy, have been in Europe for more than three thousand years. Neither the Persians, the Carthaginians, the Arabs, nor the Turks, succeeded in removing them from us in their great and terrible expansions. The great and poorly dissembled desire of the "Yankees" then to remove them from us now is absurd. And if they are not attempting this, if they do not wish a further separation between the hemispheres, what

means the Monroe Doctrine? Even in the Spanish-American Republics, if fortune had been more favorable, and they were not so degraded, the Monroe Doctrine might have some plausible excuse, some just foundation. In them there is an indigenous element; in them there are Americans in truth. Even from the mixture of the Spanish blood with that of the native it might be supposed that there had been born and would develop a race, distinct, and perhaps superior to those of Europe. But in the United States is there anything besides the earth that can be called American? What signifies then the lofty phrase "America for the Americans?" By what reason and by what right, except that of might when they have it, will the "Yankees" undertake to eject from America first Spain and afterward England, France, Holland and Denmark, that are all as American as the "Yankees," and have merited and do merit more praise from Americans, because they have colonized, civilized and christianized her, and planted in her all the virtue, and all the seeds of power and of greatness, on account of which the "Yankees" now carry themselves so boastfully.

In writing this article I have suffered myself to be led by an involuntary impulse, realizing the little value of my protest, and the weakness of this manifestation of patriotism, in comparison with those that many generous and noble Spaniards make, and will continue to make, as for example those that live in Mexico, and in the Peninsula, the wise Bishop of Oviedo and the noble Marquis of Comillas. Ashamed of my insignificance in comparison with these I have hesitated for some days to give this article to print.

Likewise the respect and admiration I still entertain for the Anglo-American nation have made me hesitate, notwithstanding the insults that her representatives have heaped upon us, for I would not in the slightest degree pay back to those representatives insult for insult, lest any one should think that I am trying to offend their nation, even though through our being slandered and she deceived by the vulgar prejudices that unheeding writers have disseminated, and still do, we should become engaged in a war that ought not to be. These unheeding writers have been pleased to picture us to the eyes of the multitude of their fellow-countrymen as a nation of fanatics and evil-doers. Almost they make them believe that we still have the Inquisition, and that we

murdered legally, when we had it, hundreds and hundreds of people. They have very carefully failed to say, either purposely or through ignorance, that in any of the most cultured and civilized nations of Europe, and not having the Inquisition either, there have been committed more cruelties, there have been erected more scaffolds, there have been burned more homes, there have been sacrificed more victims, than religious superstition has caused in all Spain. In England, mother country of the United States, English writers tell of more than thirty thousand sorcerers and witches put to death; kings, queens and martyrs as glorious as Thomas Moore, have perished there, victims of fanaticism. Luther, Calvin and Knox only asked for religious liberty when they were in the minority. In Scotland they even burned witches in the past century. And in the United States themselves, in Salem (Massachusetts alone), they have committed more atrocities and judicial murders solely on account of witchrcaft, than in the cause and under the pretext of religion did the Holy Office in all of America then Spanish from Texas and California to the Straits of Magellan.

I do not believe that the mulatto rebels and the runaway slaves of Cuba arouse profound sympathy in the breasts of the "Yankee" legislators, nor that they inspire the hope that, declared independent, they will form a republic superior to that of Hayti, and will contribute more than we to the progress and welfare of the human race, and to the increase and perfection of agriculture, industry and commerce. To me then it is evident that not for love of them but through hate of us the Senate and House of the Union protect them. And this hate, which I deplore, is what I wish to see dissipated. I hold as undeniable that in no Spanish heart, notwithstanding the insults received, exists such hate. Without it, and only through necessity, will we go to war, if we are forced to it; if we are placed as they say, between the sword and the wall. Sad it would be then to have to fight against a people in which we can not but admire excellent characteristics and lofty impulses entirely the reverse of those that stir it to this unjust contest.

That which I admire in the United States, even more than their youthful and almost childish ingenuousness, is their great desire to accomplish tremendous and difficult undertakings, and to see if they can not surpass Europe in every way.

There are in Europe houses of six stories, but the "Yankees" build them of fourteen; there are in Europe high monuments but the "Yankees" build them fifty feet higher; there are in Europe magnificent public buildings which cover hundreds of square metres, but the "Yankees" build theirs to cover thousands of square metres. Everything in America must be higher and larger than in Europe. Is not then the wish to intimidate with threats and bravadoes a nation known to be weak, to encourage the rebellion of a people it is not possible to esteem, and to violate just rights, in contradiction to this earnest desire for superiority, to the "Excelsior" so beautifully sung by a "Yankee" poet and taken as the motto, watchword and device of the nation? President Cleveland himself and all the Anglo-American people ought to protest, without the intervention of any one for us, against the violent and blind attacks that their legislative bodies have been led to make.

There was in the United States, and still is, for, I presume, he is alive, a certain Colonel Ingersoll, who like all his countrymen, wished to go further in his specialty than all the Europeans. This specialty was a terrible hate of God, and a fixed determination to expel Him from the universe, in order that the human race might be more happy free from Divine despotism. As an argument for this expulsion of God the colonel enlarged upon the cruelty with which sinners are punished in purgatory. He said that if his wife, a relative, or any of his comrades, should be suffering eternal punishment, and he was in heaven he would tell God what he thought and go to purgatory with his people. But to this it occurs to me to object. Would it not be better and more prudent instead of quarreling with God, insulting Him and calling Him tyrant, to believe that He is good, and even that all this about eternal punishment may be but a slander that has been raised up against Him in the dark ages, as Colonel Ingersoll calls them. Now apply the story to the present case, and instead of wishing to cast us out of Cuba and insulting us for our cruelties, let it be recognized and admitted that there is not so much cruelty on our part but an exaggerated kindness toward the miserable robbers and incendiaries. This would be reasonable and just: that Colonel Ingersoll leave God in peace in heaven and content himself with attacking Moses, and showing that the latter did not know as much chemistry or geology as he knows;

and that his compatriots leave us in peace in Cuba, recognizing that we must care for it better than the insurrectionists if they should become independent, although we may not succeed in making Cuba the paradise the "Yankees" would make of it, more advanced than we in mechanical arts and more enlightened and sustained by the genius of commerce and industry.

At most I have a certain vague hope, and I fervently pray Heaven that it may be realized, that the great powers of Europe that form a tacit confederation to guide and order the enlightened advance of our kind, may not contemplate with indifference the atrocious indignity of which the Anglo-American Legislature is trying to make us the aim and target. Even I still trust that the mass of the people of the Union will come to their senses, draw back from the deed they wish to engage in, and, full of honest scruples, see and note how much of cowardice, ruin, and treachery there is in wishing to take advantage of our real or apparent dejection and the disturbances that trouble us, in order to humiliate us. I can not bring myself to believe that this people, to-day in the vigor, freshness, and strength of its youth, can exhibit itself playing the ugly part of the ass kicking the sick lion. On account of all these things, it is as possible as it is desirable that the conflict that is threatened may not break forth with horrible destruction like a dynamite bomb, but that it may burst and melt away in the air like a delicate soap-bubble.

Even so, I maintain that we ought to conduct ourselves in an unassuming, peaceful, and prudent manner. We should carry our endurance to the extreme limit. The Spanish Government, with paternal care and loving zeal, should avoid as far as possible the cruel sacrifice of lives and property that an unequal war would inflict upon us; but the limit of endurance reached it behooves us to understand that the precept, "If they ask your cloak, give them likewise your gown," is advice and not evangelical command. No, we must give neither cloak nor gown; we must not yield one inch of ground in Cuba to the cupidity and presumption of the "Yankees"; neither should we continue to pay them tribute, as by virtue of unjust and arbitrary claims of indemnity we have been forced to pay them for many years, humiliating ourselves by paying it.

Rather than suffer such ignominy and so low a fall, all

hopes of honorable peace dispelled, let us declare war upon the United States; let us do it with bravery, and, although our ultimate triumph may seem a miracle, let us hope and trust that the age of miracles has not yet passed.

Who knows if the terrible shock that this war must produce, will not be a salutary crisis that will raise us from the dejection we are in and place us anew among the great nations of the world? All united in a common struggle, we will forget our political rancors, our party divisions, and our unfortunate sectionalisms; we will be neither republicans nor Carlists, Canovists nor Sagastins, but we will all be ministerialists; we will not pride ourselves upon being Aragons, Catalunians, Castillians, nor Viscayans, because we will all be Spaniards.

Our army, far from regretting the war, would rejoice that thanks to it, it would be able to struggle with people that show a front, that are not robbers to flee and hide, and in whose defeat it would be able to reap some glory. Our generals, finally, would rejoice even more, because they would have an opportunity of proving their worth, instead of playing hide and seek with an enemy that secrets itself, and sacrificing their men, not by exposing them to the balls of these enemies and their tricks and surprises, but to the inclemencies and fevers of a climate deadly to them.

Although I am an optimist, although I never lose hope, although I believe that the Spainards have now the same great personality that they had at the end of the fifteenth century, and during all of the sixteenth, when Spain was at the zenith of its power, still I do not desire the war even if I do not fear it. The citizens in general of the United States are not to blame for the absurd pride, the ignorance, and the cupidity of their Representatives and Senators. And I, without power to remedy it, do not exclude from my love of the human race the people of the United States, where there have been and are men and things that are congenial to me; elegant and inspired poets such as Longfellow, Russell Lowell, and Whittier; some thinkers, if little original at least ingenious and clever, as Emerson, imitator of Thomas Carlyle; several historians, though not profound, pleasant and agreeable to read, except when they treat of their own affairs, when they are as heavy as lead; some amusing novelists; and, above all, men of such inventive talent that they shine, like Edison,

employing electricity in not a few useful and wonderful ways. I admire, moreover, the beauty, the talent, and the refined culture of the American women, who are a most valuable and certain guarantee that if the Monroe Doctrine is carried to its logical end, and the separation between the old and the new worlds established, the inhabitants of the latter will not return to wearing feathers and skins, sacrificing human beings to idols, and eating each other.

I admire the Falls of Niagara, the riches and prosperity of the United States, the magnificence and splendor of its great cities such as New York, Boston, and Philadelphia; the facility and comfort with which they travel there by rail, and the pleasant and hospitable way the "Yankees" treat foreigners when conceit does not blind them, and when they do not get it into their heads that the foreigners are their inferiors, when they are apt to be little enough gracious and very lacking in charity. The poor Chinese, greatly despised because they work for small pay, can vouch for this. But not to tire; it is I who, nowithstanding the insults they have offered us, would rejoice in my heart if they would reconcile themselves with us, would esteem us more, and would end by loving us instead of coming to blows with us.

There is no evil from which good comes not. I am willing to assert that in any event we shall gain something. If we are vanquished we shall lose Cuba promptly, without wearing ourselves out for three or four years pursuing our wandering enemies, against whom instead of sending soldiers, we ought to send dogs and ferrets. And if we come out victorious, and all is possible with the help of Heaven, where St. James still keeps and takes care of his white horse and his arms, then the "Yankees" will be well punished, because it will take some of the conceit out of them, which is their worst fault. And I, although I am oppressed with age and infirmities, will rejoice on seeing the "Yankees" more affable and benign, less hard and insolent toward us, cured of their foolishness in regard to the Monroe Doctrine, and offering us without rancor, the hand of friendship as God commands.

Then would I sing a grand "Te Deum" from the bottom of my soul, and exclaim, imitating the venerable Simeon, "*Nunc dimittis servum tuum Domine, secundum verbum tuum in pace, quia viderunt oculi mei salutare tuum.*"



TYPES AND TRADITIONS OF THE OLD ARMY.

I. OUR FIELD ARTILLERY.

By Brig.-Gen. J. P. Farley, U. S. A. (Retired).

CAPTAIN HAAN, Artillery Corps, U. S. A., who has made a special study of the action of the field artillery in the recent maneuvers in Virginia, expresses the opinion that "the organization was not such as to develop the use of this arm to its full extent," and he further shows that in the present war in Manchuria "the occasion is a rare one, on which a smaller organization than a regiment of artillery is used in action, a regiment consisting of from thirty-six to ninety guns." This officer advocates organization, including, at least, regiments, and believes that officers of high grade should be given the opportunity to command more than a battalion. This, he says,

> Will give an opportunity for training in time of peace the officers and men of this organization to work together in time of war; to work up and apply proper systems of communication and to place the organizations in a proper state of efficiency, so that in time of war they may be controlled by the commanding general in a way that will insure both the proper co-operation with the other branches of the service, and will permit, during maneuvers, the more perfect development and application by the commanding general of grand tactics so necessary in a campaign of the magnitude that may be expected in a war with a first-class power.

The Editor of the *Army and Navy Journal*, issue of November 12, 1904, in his comments on Captain Haan's views and suggestions, from which we have freely quoted, further observes that "officers of the general staff, many of whom are connected with arms of the Service other than the artillery, do not hesitate to say that in their opinion the weakness of the Regular Army to-day lies in its deficiency in the field artillery's strength." In a short time the Ordnance Department will provide all of the field artillery batteries with the new guns and equipment which "will place the field artillery, as far as equipment is concerned, on a par with the artillery of any army in the world."

In turning over the pages of Birkhimer's "Historical Sketch of the Artillery, United States Army," and Haskin's "History of the First Regiment of Artillery," much of interest may be had concerning the field or light artillery arm of our Service, and as it now appears that the time is ripe to secure legislation at the hands of Congress for an increase of the field artillery, and that the present chief of artillery advocates this and other measures for the improvement of his corps the matter of the authorities above referred to is here abridge

and presented in form, it is hoped, calculated to arrest the attention of the readers of the JOURNAL.

By Act of Congress dated February 26, 1808, a light artillery regiment was authorized, and to consist of ten companies, but one or two of which were really mounted and equipped as light batteries. Secretary of War Dearborn, by virtue of the law referred to, directed Capt. George Peter, of the artillery, who was at the time (1808) stationed at Fort McHenry, Maryland, to equip the first light battery.

This battery consisted of two 6-pounder guns, one ammunition wagon and one light horse-wagon, in which latter vehicle were carried four cannoneers and one wagoner.

Two battery officers and one sergeant were mounted, and sixteen horses were provided for the guns and wagons. The gun-carriages and guns were of the "Gribeauval," and the caissons of the "Wurst" pattern, the whole being manufactured at Fort McHenry, Maryland, by the artillery artificers. The guns were supplied with fifty rounds each: grape, canister and round shot. For its day, the equipment of the battery was unique and second to none of the systems in vogue in Europe.

To test the battery's efficiency, during the month of May, of the same year, in which the battery was equipped, Captain Peter was directed to march from Baltimore to Washington, and at a rate of five to six miles per hour. The march was successfully accomplished, And when, at a later date, July 4th, it paraded on Pennsylvania avenue, it attracted so much attention and elicited so much admiration, that the authorities largely augmented the battery in horses and guns.

At a later date, Captain Peter marched to Pittsburg, Penn., with his battery, and there embarked for New Orleans. After a year's service with this battery, Captain Peter resigned (June 11, 1809) his commission in the army and was succeeded by Lieut. James Gibson, who remained with the battery until it was absorbed in the effort to mount the other companies of the regiment under the Act of Congress dated February 24, 1812, a law mandatory in it terms, but which was, as the sequel shows, practically evaded.

Captain Gibson was ordered north at this time and, owing to his experience and length of service with his battery, he was directed to equip the second company of the regiment as a battery of horse artillery, and with this battery he joined the army on the Niagara frontier.

Strange as it may now appear, it was none the less true, that in so trifling a matter as the expense attendant upon the keeping of horses, all light and horse-artillery batteries were dismounted; so, as Birkhimer expresses it, "this arm of the service was dismounted almost as fast as it was mounted, much to the discouragement of the men and the disgust of the officers."



MAJOR GEORGE PETER
COMMANDER OF FIRST LIGHT ARTILLERY COMPANY
U. S. ARMY



MOUNTAIN GUN BATTERY.

By the Act of Congress dated March 2, 1821, the Regiment of Light Artillery and the Corps of Artillery were legislated out of existence, and four regiments of foot artillery were authorized by the same act. Each of the new regiments were to consist of nine companies, one of which in each of the regiments, was to be a mounted battery. Before the first and only regiment of light artillery had passed away, and its officers were absorbed in the new organization of 1821, its uniform and traditions, as Haskin gives them, here find mention.

The coat of blue cloth was short, with three rows of buttons, and profusely covered with gold lace; pantaloons tight, of white cassimere, with boots to the knees. Gold wings were worn on the shoulders and spurs were always worn. The sabre belt had attached to it a despatch bag called a *sabretache*, which was bound with gold lace and ornamented on the flap with gold embroidered letters L. A.

The cap was also much ornamented.

The men wore, instead of boots, long black gaiters, coming up square under the knees, after the manner of "The Old Guard."

The great feature of the regiment was the mess, as in those days there were but two officers of the regiment married, and but one of these at headquarters.

All officers were required to dine in full dress uniform, and each officer was attended by a soldier, also in full dress. The dinner was the event of the day, especially on those days when guests were present.

So far as the service of the regiment is concerned, it may be said to have been but a paper organization and rarely mounted.

Notwithstanding the law of 1821, authorizing the mounting of one company of each regiment of artillery, it was not until the law of 1837, authorizing an extra company for each regiment, that Secretary of War Joel R. Poinsett, ordered steps to be taken in this direction.

Capt. Samuel Ringgold, commanding Company "C" of the Third Regiment, in the fall of 1838, was instructed to mount his battery, and from that hour the light artillery became a permanent part of our army organization. It is of interest to note, in view of the fame which attaches to the name of Ringgold, that he was a very ill man after his return from the everglades of Florida and after the Seminole War. It was at this time that he entered upon his new and important duties.

Upon his arrival at Carlisle Barracks, Penn., the cavalry depot of the army, all that he had as a nucleus for his horse battery was his company books, one sergeant, and one private, all that may be said to have been left of Company "C" of the Third after its campaign against the Indians in Florida.

He was, therefore, authorized to select men from the First and Second Regiments of Artillery.

In contradistinction to Ringgold's Horse Battery—the three other batteries of the several regiments were light batteries, that is, with the cannoneers riding on seats of limbers and caissons.



DEATH OF MAJOR RINGGOLD.

It is said by those who knew the circumstances well, that at a critical juncture in his illness, Ringgold's physician told him of his perilous condition, but gave him "a gleam of hope." "Save me, doctor, if possible," Ringgold replied, and then closing his eyes for a moment he uttered these words: "Oh, God, let me die on the field of battle!"

The scene was dramatic; the words proved prophetic.

Ringgold recovered, and when the war with Mexico began in 1846, he was at once ordered to the front with his battery, and to him has been accorded the credit "for that perfection of drill and rapidity of movement which the American Flying Artillery exhibited during that war."

At Palo Alto the enemy lost four hundred men while the Americans sustained a loss of but nine killed and forty-four wounded, but among the former was "Major Ringgold, universally lamented both as an officer and Christian gentleman. As his officers offered him assistance when wounded, he said: 'Leave me alone; you are wanted forward.' His prayer was answered; he died upon the field of battle."

But here let us revert to that period (1839) where Ringgold, after having fully organized and equipped his battery, marched to Camp Washington at Trenton, N. J.

This was the camp of instruction for all arms of service, and here it was that Gen. T. R. Fenwick, President of the Board of Ordnance—the first man to lead a section of Gibson's battery of horse artillery to the relief of Van Rensselaer at Queen's Heights—announced to Ringgold the equipment of the rehabilitated arm.

Brigadier-General Eustis, formerly of the First Light Artillery Regiment, commanded the camp of instruction, and at this point three of the mounted batteries, "C" of the Third (Ringgold), "A" of the Second (Duncan), and "B" of the Fourth (Washington) were assembled. "K" of the First was not, at the time, mounted, but was commanded by Lieut. E. A. Capron, later killed at Churubusco, Mexico.*

When mounted, at a later day, this battery was commanded by Capt. Frank Taylor.

The lieutenants of the mounted batteries were temporarily attached for a period of one year, until 1844, after which, under the provisions of General Orders No. 46 of that year's series, permanent assignments of subalterns were made at the instance of the captains who had the selections.

At the outset no extra pay was allowed officers serving with light batteries, and the duty was, therefore, undesirable for many who

* This officer was the father of Captain Allyn Capron whose battery did such good service at El Caney, Santiago, and who later died from disease contracted in that campaign; and the grandfather of Captain Allyn Kissam Capron, U. S. A., and Captain of the Rough Riders, killed at Las Guasimas.

could ill afford the extra expense of the mounts, but Birkhimer here tells us that the men we name "sacrificed their material interests for sentiment, and the battlefields of the Mexican War in which they acted so conspicuous a part, bore testimony before the army and the country, to the thorough manner in which they had been prepared for their, as yet, untried and arduous duties in the field."

There were other batteries mounted during the Mexican War, than those above enumerated, chief among which was "E" of the Third (Bragg), equipped with two guns and two howitzers when it joined Zachary Taylor's Army.

Upon the death of Ringgold, Bragg succeeded to the command of horsebattery "C" of the Third, and tells us that he found it

> "in the highest state of efficiency, discipline and drill, of any organization, of any arm he had seen." Then he goes on to say: "It had six guns, six caissons, two battery-wagons and two forges, each having six horses as teams and each gun served by a detachment of twelve men mounted, not on the boxes, but on high-mettled, well-trained horses, which followed as they moved at a gallop, and swept the plain of exercise like a whirlwind."

Without digression the same may be said of Tidball's battery "A" of the Second in 1861—the first horse battery of the Army of the Potomac, and with which the writer had the good fortune to serve as a subaltern during the summer and fall of that yea .

An amusing incident occurred at drill on an October morning. The battery usually broke into the gallop as it left the "battery park" and kept up a lively pace throughout its maneuvers. This practice was given to qualify the battery to maneuver with cavalry. The guns were of the smallest caliber, 12-pound howitzers, with range so short that its work could only be done at lose quarters.

The Sixth Cavalry ("Cameron's Own"), an entirely new organization, was on the occasion to which we refer, drawn up in line for parade. Notwithstanding that the men had no practice and were barely able to keep their seats, the regiment at a distance presented a very striking appearance.

The officers were in line in front of their companies, the band was at its post and the regiment had received its colors. The glittering blades of the troopers reflected the rays of the morning sun, and the whole made an impressive tableau. The battery at a gallop swung round at the command "Action front!" unlimbered quite near to, and in front of the regiment, and loaded with blank cartridges. Captain Tidball, in a spirit of deviltry, had given the order to load with blank cartridges and fire.

He limbered up and was off again to some other part of the field: the smoke clearing away revealed no trace of the regiment. A panic had seized upon all the horses, and the streets of East Washington were filled with runaways.

Some twenty or more men were on the ground where the regiment had before been in line, and their horses were nowhere to be seen.

For some days, intercourse between the colonel of the Sixth Cavalry and the captain of Battery "A" of the Second Artillery, was suspended; and here we may add that, had this incident occurred at West Point, as between "old cadets" and "plebes," it would have been regarded as a simple case of hazing. The Sixth Cavalry had been hazed; it had received its baptism of fire. The experience may have saved the regiment embarrassment on some later occasion.

But "let us return to muttons" and see why it was and when it was that "Old Zac" thus addressed himself to a battery officer at Buena Vista, "A little more grape, Captain Bragg." Birkhimer has it, that Bragg had just arrived from the left, and was ordered at once "into battery" without infantry supports and at imminent risk of losing his guns, this officer came rapidly into action—The Mexican lines being but a few yards from the muzzle of his pieces, the first discharge caused the enemy to hesitate, the second and third drove him back in disorder and saved the day.

Capt. T. W. Sherman ("Tim" Sherman) succeeded to the command of "E" battery of the Third, when Bragg took Ringgold's battery, and at the outbreak of the Civil War and before Sherman was made a brigadier-general. This organization was known as "Sherman's White Horse Battery." It rendered conspicuous service at Bull Run and later in South Carolina and Florida in 1862-64, when commanded by Capt. John Hamilton. During the absence of its captain on leave, this battery served in the line of batteries on Folly Island, S. C., in the descent upon Morris Island July 10, 1863.*

The work of the light artillery in the Mexican War is but poorly told without mention of James Duncan and light battery "A" of the Second. He was brevetted major for the part he took at Palo Alto with Ringgold, and on the day following at Resaca de la Palma, and later at Monterey he received the brevet of lieutenant-colonel, and for like distinguished conduct at Vera Cruz and Cerro Gordo he was brevetted colonel.

Ringgold and *Duncan*—what names! What inspiration for light artillerymen of later wars! If, indeed, such inspiration were needed.

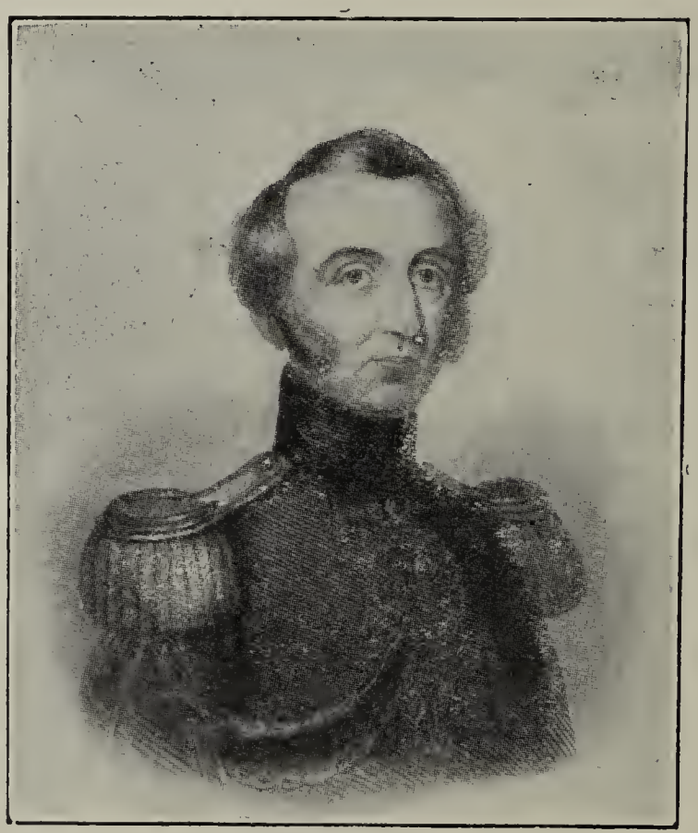
The United States Army in 1845 numbered not more than five thousand men. Three thousand of these were at Corpus Christi, Texas, under Gen. Zachary Taylor.

In March, 1846, Taylor moved southward to a point on the Rio Grande, opposite Matamoros, at the time calling upon the governors of Louisiana and Texas for five thousand volunteers. On the 1st of May he moved eastward with his main body to open communication with Point Isabel.

*The writer, an officer of General Seymour's staff, commanded the right of the line of batteries in this action.

To intercept his return, the Mexican general, Arista, moved with about six thousand men to Palo Alto, nine miles from Matamoros, and planted his force across the road. Taylor's returning column reached this point on the 8th of May, and gave battle. Two 18-pounders and two light batteries (Ringgold's and Duncan's) made dreadful havoc in the close ranks of the Mexican infantry, while an attempt to turn the American right was promptly thwarted.

The prairie grass between the two contending lines took fire, and behind the curtain of smoke Arista drew back his left; Taylor made a corresponding change, advanced his artillery again, and renewed



very truly your friend
James Duncan

the fight! The movement to turn the American left was discovered, and the guns of Ringgold's battery were wheeled round to meet him, and under their fire the attacking column was put to flight. It was at this juncture the gallant Ringgold fell mortally wounded.

It has been said that the Mexicans were astonished at the celerity of our light battery movements, and the victories of Zachary Taylor over the Mexican's (always a superior force) were due to the efficiency of the artillery arm of his army, notwithstanding the excellent mounts and the brave and impetuous character of the Mexican troops.

Just after the Mexican War, by the Act of Congress dated March 3, 1847, an additional or second battery of the four regiments of

artillery was authorized to be mounted, "I" of the First, (Magruder) "M" of the Second (Roland), "E" of the Third (Sherman), and "G" of the Fourth (Drum).

Birkhimer tells us that:

these batteries as well as the batteries before mentioned, all won in Mexico the plaudits of the army and the country. The old field-batteries were looked upon with affectionate regard by their respective regiments, each of which doubtless would have been glad to see the ancient and honorable associations perpetuated by having these, preferably to any others, equipped for a service with which their careers had been so intimately connected.

In 1865 when the selection of companies to remain mounted was left to colonels of the artillery regiments, and their expressed wishes respected, the original light companies of 1821 and 1847 were without exception retained. The traditions of an honorable arm of service are worthy of respect—a fact recognized by every nation in which the profession of arms has been cherished, and forgetfulness of which has, in every instance, been the surest evidence of military and political decadence; those who disregard them, stifle the noblest sentiment that can actuate the soldier's breast, while evincing an ignorance of human nature well calculated in its effects to freeze up the fountains of true military spirit by the chilling blasts of official indifference or neglect.

* * * * * * * * * * *

Had the field-batteries of 1847 been selected, as those to be rehabilitated in 1882, "how much it would have tended to the development and maintenance of proper military spirit," here we are using the very words of Birkhimer. "I" of the First, "E" of the Third, and "G" of the Fourth, all of which had greatly distinguished themselves in Mexico, should, by all means, have been designated by General Orders No. 96, of 1882, but not one of them was equipped as field-artillery.

In fact, in 1851, six of the eight light batteries were dismounted—but in the following year "A" of the Second (Sedgwick,) and "G" of the Fourth (Hunt), were remounted. Again in 1856, "M" of the Second, "C" of the Third, and "G" of the Fourth were once more dismounted."

"Once more" in this case, is a term that does not strictly apply to "C" of the Third, since it had not before been actually dismounted, serving, as it did, at Santa Fé, New Mexico, after the Mexican War, and simply storing its guns and material at the time, after which in 1850, it was rehabilitated as a light but not again as a horse battery.

This mounting and dismounting of batteries appears to have been based upon political expediency influenced by economy, and it was said in some cases with some degree of truth, to favor certain captains to the detriment of others, to destroy and recreate on personal grounds.

Jefferson Davis, as Secretary of War, dismounted four of the eight light batteries in 1856, while his successor remounted "I" of the First, "M" of the Second, and "C" of the Third, in the year following; but "G" of the Fourth remained dismounted until 1861.

Gen. William F. Barry, chief of artillery of the Army of the Potomac, addressed a letter to Gen. George McClellan, on whose staff he was serving in August, 1861, in which he says:

> To insure success it is of vital importance that the army should have an overwhelming force of field-artillery. To render this more effective, the field-batteries should, as far as possible, consist of regular troops.

Soon after this, all companies of the five regiments of artillery (including the new Fifth), with the exception of "H" and "K" of the Second, and "B" and "D" of the Third, were equipped as field-artillery.

General McClellan says in his report: "The creation of an adequate artillery establishment was a formidable undertaking, and had it not been that the country possessed, in the regular service, a body of accomplished and energetic officers, the task would have been hopeless."

When he embarked for the Peninsular Campaign, in the spring of 1862, he had with his several corps, forty-nine batteries aggregating 299 guns, of which 100 were in the artillery reserve.

Of this number, twenty batteries were regulars, representing twenty-six batteries, as some were consolidated for service. Of the eighteen batteri s of the reserve, fourteen were regulars, of which five were formed by consolidating two batteries into one. The First Corps (McDowell's), which did not accompany McClellan, is not included in the above estimate.

At Antietam, McClellan had sixty-two batteries; Burnside, at Fredericksburg had sixty-seven, and at Chancellorsville, Hooker had seventy-one.

The effective strength of divisions was about 5000 men and of corps 15,000, with an average of three guns per 1000 men. Of the eight corps at Gettysburg, the first battle after the reorganization of the artillery into brigades, the several corps averaged four and five batteries to each brigade of artillery, with, in four-fifths of the batteries, six guns to a battery.

The cavalry corps had nine horse batteries in two brigades. General Meade's sixty-seven batteries were met at Gettysburg by sixty-eight of the Confederates, which the latter increased to eighty-one batteries for the final struggle in the campaign of 1865.

The general character of the light artillery work during the Civil War may be illustrated by the following instances:

> Receiving in silence a most destructive cannonade, no sooner does the time come to open in reply than every piece is used in the most effective manner, the rapidity and accuracy of their fire showing no trace of demoralization. In every case when they are allowed to reply to assailants, it is done with greater promptness and precision and with the most destructive effect. Had it not been for the thoroughly efficient manner in which the batteries

performed their duty, the charge of Pickett's division would have been a success.

The firing of the Confederates became wild at times, and this was especially so just before the final grand charge when they had guns enough concentrated upon the point of attack to have swept the ground perfectly clean. It was a grand effort and would have quickly driven from the field any but the troops who were there to oppose it. The canister-fire of battery "I" was particularly murderous, and after the repulse of that charge the bodies of the slain lay in piles on the hillside and in its front.

Lieutenant-Colonel Füger who was at the time the first sergeant of Cushing's Battery "A" of the Fourth, has informed the writer that on the field of Gettysburg, when the enemy were within 400 yards, this battery fired with single charges of canister.

At that time Cushing was wounded in the right shoulder, and within a few seconds afterward he was wounded in the lower part of the abdomen, a very severe and painful wound. After this he became very ill and suffered frightfully. In answer to protestations that he should leave the field, "No," he said, "I stay here, fight it out, or die in the attempt." When the enemy was within 200 yards, double and treble charges of canister were used.

These charges opened immense gaps in the Confederate ranks as wide as a company front. Lieutenant Milne, who commanded the right half of the battery, was killed when the enemy had closed to within 200 yards, and when within 100 yards Lieutenant Cushing was shot through the mouth and instantly killed.

In front of Battery "A" over six hundred of Pickett's men were found dead; out of his whole division, 5000 strong, Pickett returned with but one thousand. They had done all that mortal men could do.

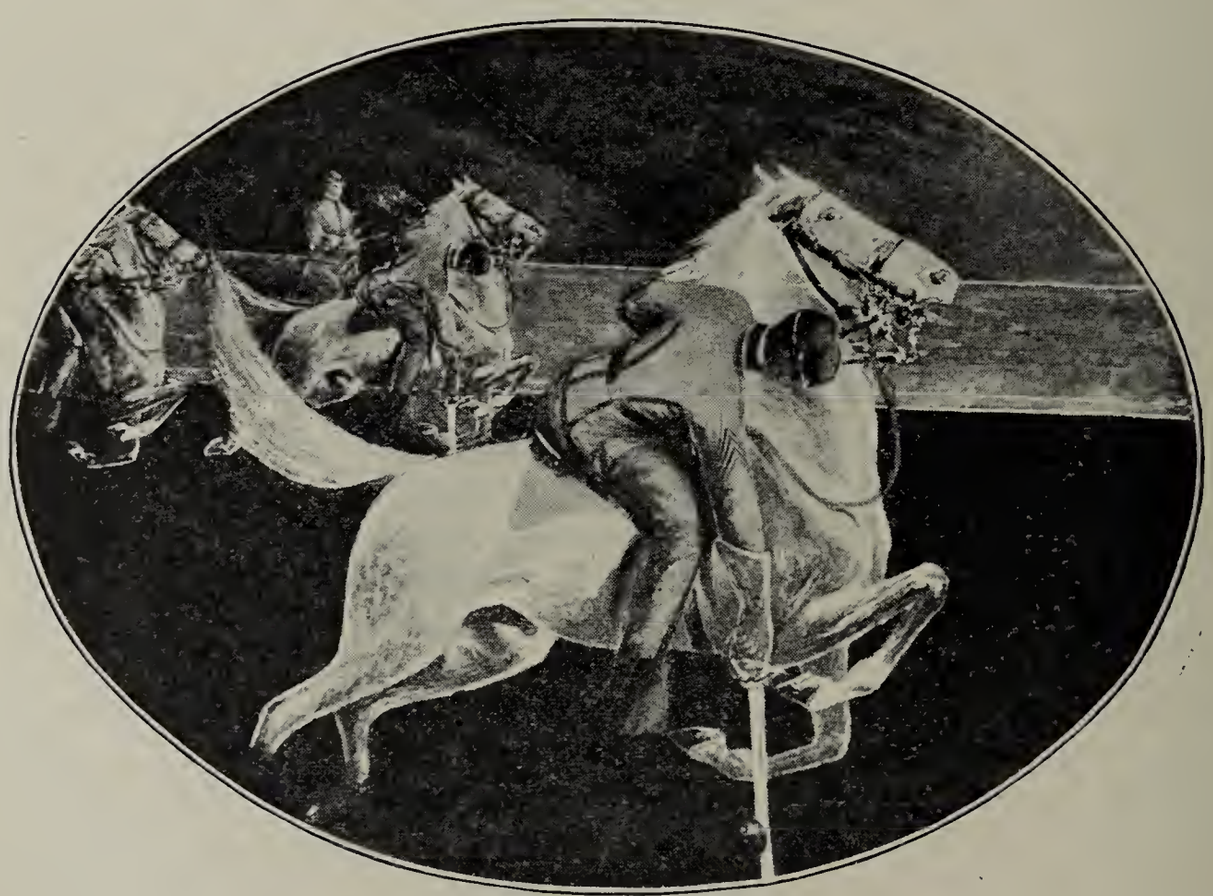
Then, too, there is something to be said for the West Point Battery commanded by Griffin at Bull Run. Officers became sericusly alarmed when Griffin's and Pickett's batteries were destroyed, officers and men wounded or dead, and horses and caissons tearing down in wild disorder, breaking and scattering the ascending line of battle. For who does not know the error on that field, when the Chief of Artillery, addressing himself to Griffin exclaimed: "Captain, they are your battery support." "They are Confederates," replied Griffin, in intense excitement; "as certain as the world they are Confederates!" "No," answered Barry, "they are your battery support." Griffin spurred forward and told his officer not to fire. The mistake proved fatal. The rest we know. This determined the defeat of the Union arms. But there is more to be said of this famous battery.

Its losses at Bull Run were twenty-seven killed and wounded. After this we hear of it (now become "D" of the Fifth) at Hanover Court House, Mechanicsville, Gaines' Mill, Malvern Hill, Manassas, Antietam, Fredericksburg, Chancellorsville, Gettysburg, Rappahan-

nock Station, Wilderness, Spottsylvania, North Anna, Cold Harbor, Weldon Railroad and Appomattox.

What of Gettysburg? Hazlett, our gallant, chivalric, handsome young soldier held Little Round Top, the key of the battlefield, against repeated assaults of the enemy, giving up his life, as did "Little Woodruff" his lieutenant, and the good work of this battery contr buted greatly to that glorious victory.

"At Appomattox, the West Point Battery saw its arduous efforts justified by the conquest of a noble peace" and a tablet at our Alma Mater will ever read: "No organization has a prouder record than Battery 'D,' Fifth United States Artillery, the West Point Battery."





DISARMAMENT.

TRANSLATED BY LIEUTENANT-COLONEL A. C. SHARPE, U. S. ARMY.

(From La France Militaire of January 3, 1905.)

PRESIDENT ROOSEVELT has invited the nations to a second conference at The Hague. In 1898, Nicholas, Czar of Russia, took the initiative in a similar measure. The advocates of universal peace were filled with joy at the thought that the nations, forgetting henceforth their hatred, anger and resentment, were about to embrace each other in an eternal alliance; they dreamed that the golden age was about to return; there were to be no more conflicts, no more wars, *bella matribus destata*. The children of men, knit together in a bond of fraternal affection, were to work harmoniously for one another, and all international disputes were to be settled by a tribunal of arbitration—the Tribunal at The Hague.

"These sentiments are the dreams of a kindly soul," said Cardinal Dubois, speaking of the Abbé of St. Pierre, who also, in the eighteenth century, had proposed universal peace among the nations.

The first conference at The Hague, where twenty-nine of the leading powers were represented, where so many noble ideas for the benefit of mankind were discussed, resulted only in the most unhappy disappointments. The illusions arising therefrom soon vanished under the touch of stern realities and cruel facts—demonstrating in a startling manner that men are not yet sufficiently civilized to become brothers.

It was believed that arbitration might be made obligatory in certain cases enumerated by the Czar. It was thought, for instance, that agreements relative to interoceanic canals would not present any difficulties in this respect, but the United States, who now have control of the Panama Canal promptly discarded this proposition. Italy likewise took the same attitude with reference to monetary con-

ventions, and Germany was unwilling to accept obligatory arbitration in any case.

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The government at Berlin formally opposed this proposition, and The Hague Conference was compelled to reject it entirely, protesting, however, that it was an excellent and most desirable idea. Failing in this, they proceeded to provide for arbitration by agreement.

As a matter of fact, they agreed upon nothing substantial at all, not even the limitation of armaments. Many beautiful things were said regarding peace and concerning the regulation of international disputes, but "the gentle dreams of a kindly soul" proved again to be only dreams.

On the day following the adjournment of this convention, England, who had been particularly loud in her pacific and generous protestations, offered a most insolent affront to the peace of the world by hurling herself on the South African republics, where she claimed certain rights—the rights of the *strongest.* The oppressed Afrikanders gave vent to their anguish in cries of distress and supplicating appeals, but they were not heeded. They appealed, indeed, to these very sentiments which had been so eloquently advocated at The Hague Conference; but nothing was done. The nations who had participated in the conference stood by, witnessing their agony and death; and to-day there remains nothing of the Orange Free States and the Transvaal; they have become a British colony. Kruger is dead, an exile in a foreign land; another hero of that war, ignobly employed, it is said, by an American Barnum, recently met a miserable death in a circus in New York or Montreal.

And yet, at The Hague Conference, the English diplomats, leading the delegates of twenty-nine great powers, had declared that violence should be resorted to only in the last extremity, and that all disputed questions between nation and nation should be settled by arbitration. Here certainly was an opportunity for Great Britain to set the example. Before commencing that brutal attack she should have submitted to this tribunal the question of her right to the territories of the South African republics, and should have abided by its decree, whether favorable or unfavorable; but she took good care to avoid such a possibility.

A second drama, quite as serious, is now being played in Manchuria, completely dispelling once again all the dreams of universal peace, and confounding the generous advocates of obligatory arbitration. What madness! They do not seem to understand that whatever the facts, the economic interests or political prestige of a people, these questions always have been and must, in the very nature of things, continue to be settled at the mouth of the cannon.

It is true that in these modern times, wars are not waged to avenge the offended pride of kings. We no longer see a Tourville attacking in the Mediterranean a Spanish fleet because it had not saluted the French flag; but what has been the general character of wars since the days of Louis XIV? Largely wars of commerce; what were the wars of the eighteenth century, the Seven Years' War, so disastrous to our colonies? Wars of commerce. What were those of the first empire? All wars of commerce. What was the meaning of the Continental Blockade—what the significance of the present conflict in Manchuria? Simply wars of commerce and poli-

tics. Russia and Japan were destined to this fatal encounter, and it cannot be seen how arbitration could have successfully intervened in their case.

For two hundred years Russia has been trying to acquire a port on some open sea, realizing that without such a port she can never aspire to first rank among the great commercial powers; in Europe, she is shut up as in a prison; hence she turns toward the Pacific as if in obedience to a law of attraction. There was a time when she hoped to reach the borders of the Indian Ocean through Persia—Persia, struggling between two powerful and redoubtable neighbors. She has revived in that part of the world for her own advantage, the once colossal empire of Genghis Khan and Timor. The Trans-Caspian Railway, due to the genius of General Annankoff, now stretches across this immense realm. Even the great desert of Kharsur athwart the path, has been overcome with the greatest sacrifice, proving no obstacle to the faith which has animated the policies of the Czar.

Defeated in the west by the hostile diplomacy of England, Russia is persistently pursuing her economic policy in the Far East, in the Gulf of Pechili and at Port Arthur. The Cassini Treaty, wrung from the Tsung-li-Yamen, enabled her to bind these remote countries to the central government at St. Petersburg by the great Trans-Siberian road. This accomplished, she seemed about to realize her fond dreams; she was about to become the redoubtable commercial rival of England. The rich products of the great Chinese Empire were to be absorbed by her merchants; extending her influence over Korea in concert with Japan, her peaceful conquest seemed to be complete.

But suddenly a nation rises like an apparition on the horizon of the Orient; Japan, victorious in 1894 in its war with China, although deprived of the fruits of that conquest by the European powers, sees with alarm a rival power extending its influence over the gulf of Pechili, and laying its hand on the great empire of China. This new nation also has been dreaming of dominion in the Chinese seas and of extending its influence over the "Sons of Heaven." This new nation, which has now taken its place among the great military and naval powers of the world, sees its political and economic interests menaced by this Russian invasion on the borders of the Pacific, and it declares war.

Could this fatal encounter between two great powers having the same aspirations and the same interests in that quarter of the globe, have been prevented? Could obligatory arbitration have been imposed upon these contestants? Is this not, alas, an indisputable evidence that war may sometimes be a necessity, sometimes inevitable?

What must be our conclusion? The second Hague Conference will not prevent these great tragedies when the independence the economic interests, or the national policy of a people are threatened; they may, perhaps, formulate certain rules of international law for the regulation of war on land and sea; perhaps a permanent arbitration court, in unimportant cases, may be able to make use of the beautiful palace which a philanthropic American has left seven and a half millions to build; but we should bear in mind that the words of a great writer of the seventeenth century still remain true: "We should always be prepared for war. * * * The better our preparation, the less our liability to have it."

THE STRATEGIC FEATURES OF THE OPERATIONS IN MANCHURIA, AS ILLUSTRATED BY EUROPEAN AND AMERICAN CAMPAIGNS.

By T. Miller Maguire, M.A., LL.D., Inner Temple, Barrister-at-Law.

(A Lecture before The Royal United Service Institution.)

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THE very first point that appears to me to be the greatest lesson is only another confirmation of the wisdom of the ages. The most certain oracles of time have been illustrated in our own generation again and again. They have been illustrated in connection with the great Civil War in America; that is a little before my period of personal observation, but I see officers before me who could repeat every phase of it off by heart—officers of both services. They have been strikingly illustrated by the collapse of France in the year 1870-1871. I refer to this now at the beginning because I have to illustrate the strategy in Manchuria by the strategy of the campaigns in Europe and America. They have been further illustrated in connection with the Turkish campaign, 1877-8, and strikingly in connection with our recent campaign in South Africa, to which, because it leads to political and other disagreeable discussions, I will not refer from a military point of view, and of course, the less politicians say about it the better—I mean to say, the better for the politicians.

Now, what are these principles again illustrated in Manchuria? The first is the old Roman proverb, that if you wish for peace you are to prepare for war; but *a fortiori*, if you are about to be involved in war you are to prepare for war. The preparation for war is the first and second and third duty of a State, as long as human beings come to life, generation after generation, with their present ideals and limitations. It admits of no question: *Si vis pacem, para bellum; si vis commercium, para bellum; si vis gloriam, para bellum.* If you wish even the prolonged existence of your community, prepare for war. Now, do not you see in Manchuria that the principles of the oracles of time set forth in 1870 by the banks of the Rhine have been exemplified by the banks of the Yalu and the Sha-ho? Here is a great community, Russia, with large pecuniary and with perfectly prodigious and inexhaustible material resources, and with long and honorable military traditions. There is some doubt about the population; but at the least computation I suppose Russia has 150,000,000, and at the very most, I take it, Japan has 50,000,000, souls; at any rate, about three to one. Now, how does it come to pass that this new military power can challenge a power like Russia, with such a long history of military distinction, and with a reputation for the absolute invincibility of its troops on the field of battle? What is the cause of that? Is it because the Japanese man in the year 1900 was by nature a very much bigger and better and stronger man, with bigger brain power than the Russian man? Certainly not. Why? Because the Japanese prepared for war in time; they made Wisdom their goddess; they eschewed selfishness and folly. They recognized the secret of national greatness for an island. What is the secret of national greatness for an island? Naval invulnerability. They recognized the secret of national expansion for an island. What is the secret of national expansion for

an island? Military expansibility. They recognized these two facts; they recognized what the American general said: that no more brutal foolery or ferocious folly could be imagined than for a nation to deliberately send forth across the seas or across the frontier the prime of its youth, inferior in intellectual equipment, inferior in physical development, in *matériel*, purchasable things, to its death. Do you want an example of ferocious folly? It is ferocious folly in its quintessence, for the rulers of a State to get the best manhood of the State, to give it inferior guns, inferior horses, inferior medical supplies, old curiosities, Slade-Wallace equipments, inferior training and for the lowest purposes of paltry economy to send it forth like sheep to the slaughter. The most certain oracle of time is that the nation which acts in this fashion will decay, will be defeated, will perish, and the nation that acts as the Japanese have done for the last thirty years will probably thrive and prosper. This is the secret of war, and that is the first oracle of time. A philosophical humanitarian, otherwise a pompous silly crudity of a person, would have had us believe at the time of The Hague convention that these theories were out of place at the close of the nineteenth century. These have been strikingly confirmed in one sense in 1899 by ourselves, and in another in 1904 by the Japanese.

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Here is another oracle of time: "No nations which do not directly profess arms may look to have greatness fall into their mouths" (*Bacon*). I strongly advise you, therefore, to trust not to any contingent remainders of arbitration treaties, but to a proper navy and a proper army. The weak will always be mulcted in arbitrations, which are screens for nerveless policy. Would the United States submit the Secession question or the Monroe Doctrine to Western European arbitrators? I trow not.

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Command of the sea and its effects have been powerfully displayed by the Japanese. Had the Russians been as powerful by sea as they expected to be, the history of the war would be very different indeed; the Japanese would now be even worse hampered than were the Confederates in 1863.

Observe the effect of a peninsula on the strategy of a sea power whether the peninsula be European or Asiatic. You have a map of Europe; look at the Balkan Peninsula, and consider how Russia was hampered by lack of sea power in 1877–8. The Italian Peninsula—the Spanish Peninsula will also do for my purposes. The peninsular power that has command of the sea in the Mediterranean unquestionably can preserve the main body of its territory absolutely intact. Thus the Greeks, the Romans, the Turks, and the Spanish in turn ruled the waves. When the Romans lost command of the seas for a while, the Carthaginians did as they pleased; when the Romans won it, the masterful genius of Hannibal, when he managed to pass the Alps into Italy, could not ruin Rome.

When the theater of operations is a peninsula, the effect of naval power is twofold. I have no passion or prejudice in this matter at all. Suppose the Russians beat the Japanese—I do not think they will—but suppose they beat them on the Sha-Ho and made a strategic counter-stroke, and advanced from the defensive to the offensive, and got past the Yalu and got into Korea,and the Japanese had still command of the sea. The further the Russians got down into Korea the

more uncertain th ir position would become; for instance, take Gensan, Chemulpo, etc. As the Russians went down toward the foot of the peninsula they would be dragging at each move a lengthening chain. For the benefit of the ladies I will demonstrate the principles of lines of communication by which armies live, on the board; but these principles are the foundation of the art of war, and quite familiar to my audience. An army, as a rule, lives from behind. As the Russians advanced down Korea, their flanks would be exposed to raids from the sea. The enemy could draw them down to the end of the peninsula, and then check them, and turn on them to drive them back, and exhaust them, and cut their lines of supply. Each army corps would eat out nine miles by five in an ordinary rich country in one day; therefore, each division has to bring up five miles of wagons. (The German Army has wagons enough to reach the whole way from the Elbe to Russia, if it were to mobilize.) Consequently, the line of communications is a vital matter. When a continental power goes into a peninsula, and the people are hostile as they were in the Spanish Peninsula to the French, or the people are merely non-martial races—a kind of contemplative philosophers absorbed in the ease of decadence—then the sea power is perpetually on the flank of the invading power threatening it. That strategy has been admirably illustrated by the Japanese. In describing the Japanese strategy till they crossed the Yalu and gained New-chwang, I am merely repeating the lessons of our war against Napoleon and his marshals in the Iberian Peninsula. They constantly threatened the Russian communications while securing their own. Therefore, when you look at a map and want to study strategy, and you assume sea power, you will find in all history that the sea power will invariably get at the peninsula if it can, or the peninsula power will draw the invading continental power down toward the apex of the peninsula, cover its own lines on each side, threaten the enemy's lines, and drive him to retreat. Thus Wellington protracted the war in Portugal and Spain from 1808 till 1813.

But the advantage of a peninsula to a sea power soon begins to diminish, if it advances from the peninsula into the heart of the continent. Th n the conditions become equal again, and with each day's march the balance of the advantage turns more and more in favor of the land power.

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We now come to another principle, the principle of converging lines and their application. Now look at the little map of Virginia. The Federals were advancing on converging lines into the Shenandoah Valley from Western Virginia, and into Eastern Virginia from the Potomac, and from the sea. Hence their columns were separated on exterior lines, and Lee and Jackson and Magruder and Anderson, acting on interior lines, beat them in detail again and again in 1862 and 1863.

It does not make the least difference whether Alexander the Great is fighting against the Persians, or Cæsar is fighting against Gauls, or the Black Prince is fighting against Du Guesclin, or whether Turenne or Frederick, or Marlborough or Napoleon, or Lee or Osman Pacha be the hero; the principles of strategy are exactly the same. It was thought by some red-tape European soldiers that mere tyros were about to make ridiculous campaigns in Virginia, and it was said that the Federal and Confederate soldiers would know nothing about

the art of war. But these same soldiers happened to have had the very best college at that time in the world—West Point—and a great number of the officers were so familiar with military history, that in discussing the plan of campaign they used to say: "Shall I do as Marlborough did, or as Napoleon did, or as Wellington did?" knowing that the other officers, their superior or inferior officers, as the case might be, thoroughly understood what they meant, because each knew that the other knew perfectly the operations of Napoleon or Wellington described in history. So it came to pass that every one of the principles of the Napoleonic wars was put into practice in America. But the Federal leaders remembered another stiking incident in history; they remembered the command of the sea, and they had very good reason. The thirteen colonies won their independence, not by any great strategy on land, not by any great tactical superiority over the British in the field, because they had neither, nor did they pretend to have. They got independence because the British fleet for a short period lost command of the sea. If the gallant admirals present disagree with me, I know they will slash me to bits at the discussion. But I assert they lost command of the sea for a few months. The gallant admiral (Sir E. Fremantle) says, Yes. That was in 1781, and it was all the fault of Admiral Graves—it was either the fault of the government or Admiral Graves—I fancy it was the government; the charlatans of party strife have cost many a loss of prestige and holocausts of men, and if they don't improve soon they will cost us all our Empire. The fleet was not able to cope with the situation for a few weeks, and in those few weeks Cornwallis had surrendered Yorktown.

There were distinguished generals in the United States of America on both sides of their own Civil War, a far fiercer struggle than their War of Independence—the Federals and the Confederates; they comprehended the value of sea power. Look at the little map of Virginia. Do you see Washington and Richmond? Do you see Chesapeake Reach on my right? Then you see broad and navigable rivers coming into the sea; you see the railway lines of communication from Washington, Gordonsville, and Charlottesville to Richmond, and lines of communication by Fredericksburg to Richmond. All through the war the Federals, once the little *Merrimac*, ironclad gunboat, was disposed of, had absolute command of the sea, and accordingly they not only blockaded all the ports of the Confederates, not only prevented them selling any of their cotton in Lancashire—so far reaching are the effects of the futile foolery called war—but they sent expeditions up into the very heart of the country; they sent expeditions up the Mississippi, which enabled Sherman to traverse Georgia in due time; they sent up expeditions to Richmond. They were always on the flank of any invasion of Washington from Richmond northward, the same as the English in the peninsula were always on the flank of any invasion once they had possession of Portugal, from the south of Spain to the Pyrenees, and from the Pyrenees southward to Lisbon. "He who hath command of the sea can take as little or as much of the war as he pleases"—in Virginia, Asia Minor, in India, in Manchuria. When McClellan failed to get to Richmond in 1862, and was cut off from his line of communication at Whitehouse, on the York River, he immediately changed his communications to Harrison's Landing, imitating Sir J. Moore. So we have these points established again

in the American Civil War, change of base and threatening hostile flanks, and feeding one's own army by a flank by means of sea power.

We now come to another strategic principle—dislodging an enemy by repeated threats against his positions and his line of supply. This has been the recent aim of the Japanese against Kuropatkin. The French would gladly have done this, 1870–71, and cut the Paris to Nancy railway line, but the Germans had such an enormous host, and they were so ready and well equipped, well fed and well handled, that they covered the whole railway. But the distance from Strasburg to Paris was short compared with the distance from the Mississippi to Savannah or the Manchurian distances. It was only 250 miles from Paris to the Rhine, but even those 250 miles were such a serious matter that the Germans had to put 150,000 troops along that line, independent of their field armies south and north thereof. And you remember well enough, such of you as were sent for philosophical, humanitarian purposes, to South Africa, the long line of communications, longer, even, than Kuropatkin's or the Germans'. The line of communication between Cape Town and Pretoria is nearly 1000 miles in length, and that is a good deal longer than the lines of communications of most armies. Of course, the longest in modern wars, in a way, was Napoleon's between Paris and Moscow—1500 miles—in 1812; but then he had allied States half the way, as long as he was successful; they turned on him in 1813. He really only had about 600 miles of communications, from the frontier of Prussia to Moscow. All through history when there is only one road or rail, or even two roads or rails or a narrow line of operations, the supply, the food of the army is a matter of vital importance. In the presence of ladies I will not quote the exact words, but armies march on other organs than their legs. The American colonel, Wagner, lecturing at West Point a short time ago, sums up the art of war more concisely than most lecturers. He says the art of war is just simply three things: *a*. That soldiers must get plenty of food, like other men. *b*. That not only must they get plenty for their own bodies, but they carry with them deadly weapons which exhaust an enormous amount of material, and they must get a constant supply. Very often it takes as much lead as a man's weight to kill a man. They must keep a constant supply of replenishment, repairs, and every thing else needful for these weapons. Then they use hordes of horses, like Mongolian invaders. Napoleon had 150,000 horses when he went into Russia across the Neva; and I think you had 400,000 horses, all told, in Africa, and the horses want food. So you have two points: men and animals, moving cities of 300,000 or 400,000 population, equal to the population of Dublin or Belfast, all to be fed; any interruption of supply for a few days means an appalling disaster. In the American Civil War there were 900,000 men in the field at the same time; in France, in 1871, there were one million men on the German side alone. In the American Civil War there were 300,000 Federals dead in four years. These vast moving cities, moving to destroy each other, must, in their course, be perpetually fed; and the amount of ammunition required passes belief. Those are two of the leading doctrines of the philosophy of war. And the third is, to use the American colonel's phrase: "That two men will always whip one." Whipping is a more serious matter in war than in the nursery. This phrase implies that the next strategic consideration is concentration of force, superior to that of the enemy, at a

vital point. Now, inasmuch as an army must live by the line of communication, it has always been a great point for the assailants to try and cut the line of communication. The base of the army, every lady now knows, is the place from which it gets its food, its ammunition, and its recruits, and to which are sent back its sick and wounded. The line of communication is a railway, or road, or river, canal or estuary.

Chattanooga is on the Tennessee, and it was the immediate base of Sherman in a very remarkable campaign in 1862; Atlanta, an important town in Georgia, was the objective. The distance was about 110 miles. Kuropatkin entrenched; so did the Americans under General Johnston. So fond is Professor Wagner of his art, that he says it is really a pity Johnston was removed, because everybody engaged in the war would be soon dead. No man can live forever. Looking at it from that point of view, he says it was a great pity that the Confederate Johnston was retired by his government, because if he had only remained a little longer he would, with the loss of only some 10,000 men, have left behind some splendid military lessons with regard to detaining operations in war. I would not say anything so heartless as this, but it is said by Wagner, who is an eminent strategist; in fact he is the gentleman who has drawn up magnificent schemes for the invasion of Canada, which I would like you to see. They are interesting to a degree, and I have a very high admiration for him. Now, General Johnston did not want these Federals to get to Atlanta. Accordingly, he fought detained battles at different places: Rome, Dalton, Resaca, Kenesaw, and so forth. He fortified each position; the woods gave him ample material for fortification. Sherman came opposite him, but Sherman could not dislodge him by front attacks. When he tried to do so the loss was excessive. Sherman accordingly tried turning movements. Instantly Johnston retired, and did the same thing again, whereupon half of Sherman's force marched along about twenty or thirty miles and entrenched opposite Johnston, and the turning movement was repeated by the other half. A front attack or a counter-stroke on the other side was perfectly out of the question; it would be as futile and wasteful as Grant's at Cold Harbor, as, indeed, it has been in some of the later Manchurian operations. Is it not the case that just now the Japanese and Russians are heavily entrenched, not a mile apart in some places? The positions were generally along rivers or near mountain defiles or in woods; but the Tse and Sha and Hun are much easier words than Chickahominy and Rappahannock and Pamunkey, and other American battle sites. The turning movements of Sherman against Johnston lasted four months; then Atlanta was taken and destroyed, and the formidable, indeed terrible, Sherman, abandoned his line of communications and lived on the country during his next march to the sea at Savannah. There can be no question that some of the British operations in the peninsula are, as the French strategist, Vial, says, models of the art of war. Jackson, Sherman, the Russians in 1812, and Kuropatkin, have imitated Wellington by way of retirement, and the Japanese threats against the Russian line are only, on a larger scale, a repetition of Wellington's campaign of 1813 against Joseph and Jourdan. The latter were far more successful, and the Frenchmen did not make anything like as good strategic defense or tactical resistance as the Russians have done. The numbers were fewer, but the principles were the same.

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Let no one sneer at the Russians for retreating nor at the Japanese for suspending operations after great and bloody battles. Napoleon, Wellington, Moreau, Turenne, and Gustavus Adolphus all conducted skilful retreats. Strategic pursuits after bloody battles are unusual; the Germans were slow after Wörth, Lee failed to pursue after Fredericksburg and Chancellorsville.

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I have said enough to prove that soldiers act in pursuance of mighty secular forces than brutal ambition or ferocious folly. War is not brought about by soldiers. Literary men and orators have been often far more rash and ferocious than any soldier, and the prolongation and half the horrors and two-thirds of the expense of war, are caused by political triflers, game players and schemers.

Before war breaks out there are many oracles of time that point out certain methods of facilitating the success of the national leaders in battle and of limiting its duration and diminishing its strain and minimizing its loss.

After war breaks out the principles of strategy are so simple that, as Von der Goltz says, any ordinary man of business could master them in a few weeks sufficiently to follow the progress of a campaign with absorbing and intelligent interest.

It is also, as my late friend, Colonel Henderson said, as General Sherman said, and as Pitt said, an infamy, an outrageous breach of honor and duty, for men entrusted with the destinies of a people to send the fighting men of their State to be slaughtered by their enemies in the field for lack of training, organization, sufficient numbers, armament and equipment.

GUN EROSION.

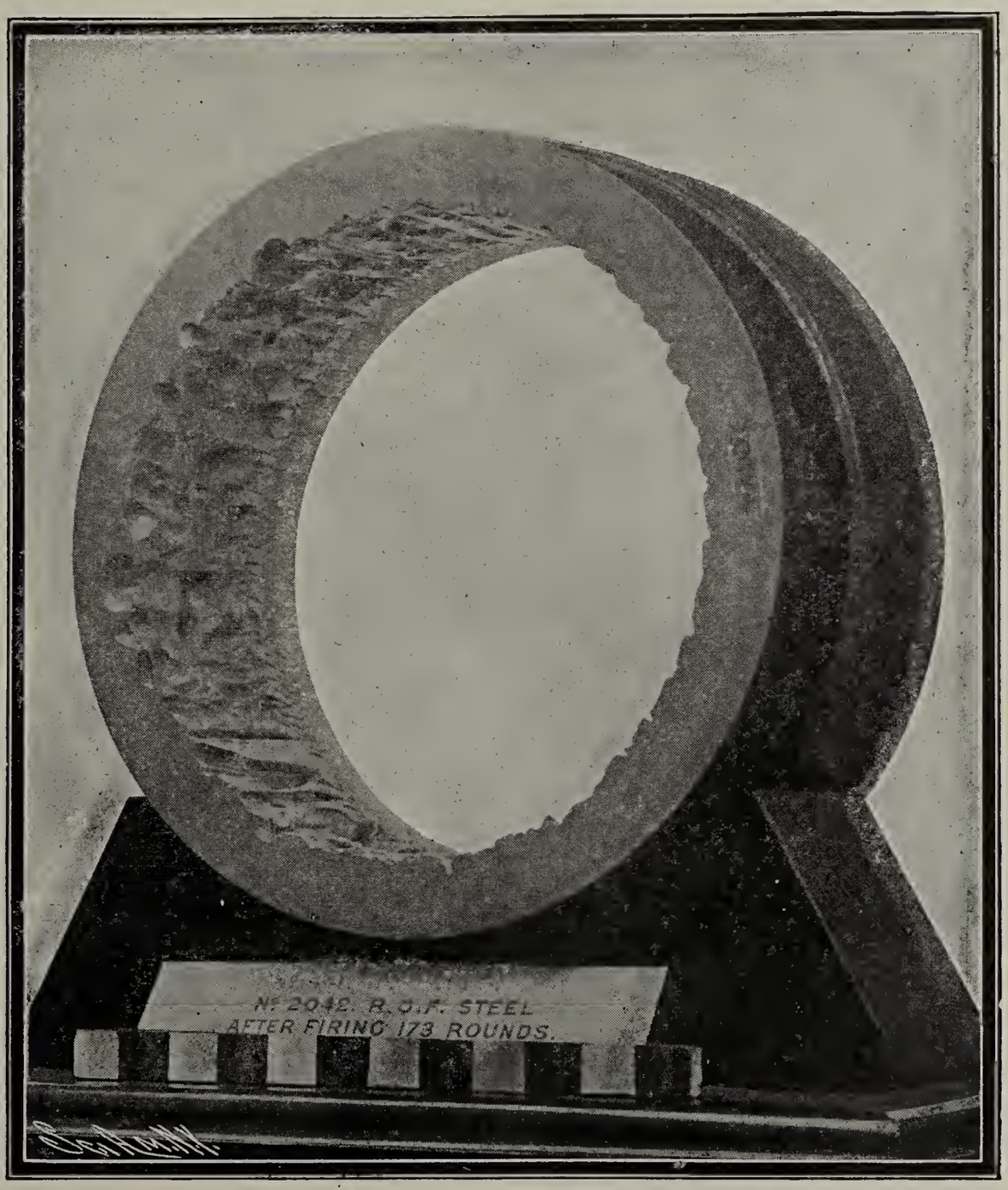
(The Scientific American.)

THE high velocities and increased energy of modern guns have not been obtained without the sacrifice of other desirable elements in the gun. The most serious trouble that confronts the modern artillerist is the tendency of the smokeless powders, that are now exclusively used, to burn out the interior lining of a gun, particularly near the powder chamber. The powder itself is the cause of more or less anxiety because of its chemical instability. In our own navy we have recently seen the issuance of an order to reduce the charges in all guns using a certain brand of powder, of which extensive shipments had been made to our various vessels.

But that is another story. The erosion, or burning out, of the interior tube of the gun, which is that portion in which the rifling is cut, and which is in immediate contact with the powder gases, is due to the high pressure and intense heat of the powder gases. At the instant that a charge is fired, even in the case of modern, slow-burning powder, a great volume of gas is generated, and being confined in the powder chamber by the projectile, its pressure rises to an enormous figure, which, in the case of the service charges in the United States guns, is as high as seventeen tons per square inch. This is accompanied by a proportionate rise in the temperature of the gases. If it were possible to look into the powder chamber at the instant of discharge, it would be found to be at a dazzling white

heat. As the projectile begins to move down the bore of the gun, these white-hot gases rush out of the powder chamber, and as they stream from the larger chamber into the smaller bore, they literally melt the hardened steel surface of the bore, the process being probably assisted by some chemical reaction not yet thoroughly understood. This erosion is further assisted, and, indeed, perhaps is primarily produced by the imperfect obturation or sealing by the copper rifling band of the space between the projectile and the walls of the gun. The gases, under the enormous pressure, quickly find out the very smallest way of escape past the base of the shell, and they stream at an enormous velocity and still at a white heat, through any such slight opening, and melt the hard steel of the gun just as a stream of steam or hot water would cut its way through a block of ice.

It must not be supposed, however, that all modern guns, after firing 176 rounds, would be in the parlous state of the gun from



which the specimen shown in our engraving was taken. This gun was an English piece, and it is well known that the English artillerists have had great trouble from erosion because of the quality of powder which they use. This powder is known as cordite, and the erosion is the price which the English pay for certain desirable qualities which are absent from other powders that do not cause so much erosion. Cordite consists of 58 parts of nitroglycerine, 37 parts gun-cotton, and 5 parts vaseline, and it is the large amount of nitroglycerine that is responsible for the serious eroding effects mentioned above. Bulk for bulk, the English powder is much more powerful than the United States Navy powder; and according to Admiral O'Neil, the late Chief of Ordnance, it requires only about half the weight of the charge for a given gun as compared with the nitrocellulose powder used in our own guns; consequently, there is a great reduction in the weight of ammunition, and a given number of charges will make a proportionately smaller draft upon the displacement of a vessel, while the individual charges are easier to handle at the guns. On the other hand, with the nitrocellulose powder, the life of the guns is very much longer. Indeed, the erosion trouble has been practically eliminated from the guns of our own navy. The English, however, consider that in view of the advantages of lightness and compactness, it pays in the long run to use a high nitroglycerine powder, and reline guns when they become sufficiently eroded to impair their accuracy. They claim that the operation of relining, as practiced in their gun factories, is not such a difficult or tedious operation as might be supposed.

We must confess to feeling a strong prejudice against the use of a powder that commences to destroy the gun from the very commencement of its active service. On the other hand, the Japanese are using the English type of ordnance, and although they have developed a new powder of their own at their home factories, we believe that it is a high-temperature powder of the same general character as the English cordite. The present war should serve to give some very valuable data on this most important subject.

AMBULANCE DOGS IN WARFARE.

(*The Lancet.*)

SOME interesting experiments were tried upon Wimbledon Common recently with dogs trained by Major Hautdeville Richardson for ambulance purposes. The idea of using dogs for this purpose takes its origin from the dogs trained by the monks of St. Bernard for finding bodies lost in the snow. The St. Bernard breed of dog is, however, too large and not swift enough for use in war and the same remark applies to bloodhounds. These dogs, moreover, hunt by smell, whereas the sheep-dog or collie is said to hunt by intelligence or with its brains and not by smell, the cross bred dog showing even greater intelligence in this respect than the thoroughbred The use of dogs for war purposes has been tried by the German Army, and some 200 dogs formed part of the Herero expedition. Major Richardson has sent some trained dogs to Russia for use in the present war, and these are said to have given satisfaction, and Italy, Austria and Switzerland are also trying the experiment which may be said to be still *sub judice*. The experi-

ments which took place recently were intended to demonstrate the use of dogs in locating the wounded in the open and under cover, neither of which they did unassisted, and in carrying succor to the wounded when found, in the shape of bandages and brandy. For the purpose of the experiment only two dogs were employed, the one a cross between a collie and an Eskimo and the other a cross between a retriever and a collie, the former being if anything the better of the two at its work. Each dog was provided with a water-proof canvas saddle with the Red Cross painted upon each side, which contained eight bandages for the wounded, a wooden barrel of brandy was suspended below the neck, a small water-proof sheet was attached to the neck of the animal as was a bell for night use. With regard to the experiments, their success on Wimbledon Common was only partial. Many of the "wounded" lying in the open were plainly visible to the onlookers, and yet the dogs, after being released from the leash with the order, "Seek wounded," went gaily barking past the wounded in their glad release, while in finding persons located under cover they had to be assisted by Major Richardson. The verdict of those present at these experiments was that the result was anything but conclusive. It must in justice to Major Richardson and his dogs be said that they had traveled over night from Scotland and might naturally be tired and not so keen as otherwise they might have been; but the question naturally arises: What practical value to ambulance work will dogs be even if the system is properly and more efficiently developed? That dogs with the aid of hospital orderlies would be of assistance in locating stricken people on distant parts of a battlefield is perfectly true, but that a dog unaccompanied would discriminate between one actually dead and those in need of relief is quite another thing. Again those in need of relief are generally beyond the power of helping themselves to the relief which the dog might bring them, and to those who are not injured so seriously as to be unable to help themselves, the bandages would be of no more use than those already supplied in the antiseptic first-aid dressing to be found sewn in the skirt of every soldier's tunic when proceeding to the front. This, as we know, in South Africa, largely helped to the keeping clean and quick healing of wounds by its immediate application by the wounded soldier himself. The brandy carried by the ambulance dog would certainly be at the disposal of the wounded, but it is questionable whether it would be beneficial to him or not, especially if his wound was attended with hemorrhage. As water carriers or as bearers of ammunition dogs might certainly prove of use. Dogs, as is very well known, will attach themselves to regiments and would undoubtedly either by instinct or smell go to men belonging to that regiment and thus carry them assistance. Whether they recognize uniform or are guided by smell or intelligence, or both, it is impossible to say. Smell has probably most to do with the power of a dog to locate the wounded. The giant of story said:

> "I smell the blood of an Englishman,
> Be he alive or be he dead"—

but we are not told that he could further decide whether our countryman was still with us or was gone before. The ambulance dog would be in the same plight. The power of discriminating between the live and the dead would be impossible and the ambulance dog

is quite as likely to remain by the side of the dead man as by the side of the living. By the smell of blood is not meant the smell of actual blood, for in the case of a wounded man this might or might not be present. But the smell of an Englishman is probably as perfectly clear to a dog's keen sense of smell as the smell of a Kaffir is equally distinct to us. It is very probable that the benefit to be derived from ambulance dogs in warfare is not worth the expense of $125 per dog which is said to be the commercial value of one of these trained dogs, and we think that the British War Office for the present is quite right in awaiting further evidence of their usefulness

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EQUINE INTELLIGENCE.

AS a sort of comment on "the superstructure which the creature builds for himself out of its individual experience," let us glance at the following, taken from a paper by Major Hughes-On low in *The Badminton Magazine* (London).

Let us consider what has been the effect of man's training on the intelligence of the horse. In most cases, certainly with well-bred horses, we have not tried to improve it; rather, on the contrary, we have tried to make the horse obey us in every way, to depend upon us for everything, and never to think for himself. When at work he is never loose, and when not at work he is shut up in a stable. As far as I know, the only classes of horses that have been trained to work loose are the railway shunting horses and some farm horses, and certainly many of these show a good deal of intelligence in their work.

I should certainly say that memory is the horse's strongest mental attribute. Horses never seem to forget a place they have been to, and if one has been frightened by anything behind a hedge as he is going along the road, he will remember the place to the end of his life. I am sure also that they have a very good memory for people and other horses. Our system of horse management tends to improve their memory, for we keep them shut up on an average for at least twenty of the twenty-four hours, during which period they have very little to do except to think over what they saw in the short time they were out. I take it that if we lived the same sort of life we should not forget many of the places we had visited.

The extraordinary thing is how fond horses are of their stables; the one idea of most of them on being taken out is to get back again as soon as possible. How different is this from the behavior of kennel dogs, who go half mad with joy on being let out and are miserable when the time comes for them to be shut up again; and it is not that horses take no interest in what is going on round them, for if a horse be loose in a box with a half door he will spend most of his time looking over it.

But it is in their absolute lack of common sense that their want of intelligence is most plainly shown. Ninety-nine horses out of a hundred lose their heads directly they are in trouble. If they can they dash madly off, quite regardless of what may be in their way, and come to awful grief over area railings, quarry pits, and such like obstacles, which they could by no possibility hope to get over in safety; their conduct is absolutely suicidal. Then, again, if they are fast in a ditch and cannot run away, they struggle frantically

for two or three minutes, and then give up altogether; they seem to have no idea whatever of intelligently employing their strength to get them out of their difficulty. How stupid most horses are, again, in going through gates and doorways and over bad ground! They look out for their fore feet and shoulders, but leave their quarters and hind legs entirely to chance, and unless the man who is leading them is careful to take them through quite straight, they will not seldom hit the point of their hips such a bang against the door-post as to do themselves serious injury. If you ride a horse at a walk over a little open drain about a foot wide, he will always step over it well enough with his fore legs, but as often as not he will drop one of his hind legs into it; and I have seen several nasty accidents out hunting caused by fidgety horses, who would not stand still at the covert side, or when waiting their turn to go through a gate, getting their hind legs into deep ditches or over the side of field bridges which have no rail or parapet.

It would be interesting if one could form any idea of how much horses are able to tell one another. Of course, in common with all gregarious animals, they have certain signals to express feelings of fear, pleasure and so on, but I sometimes think that they must be able to do rather more and to hold some sort of conversation. If a number of horses are turned out together for any time they always form cliques Two horses will often be great friends and have nothing to do with the others; generally there will be a ruling spirit who will be master of the rest, but this boss is by no means always the biggest and strongest; in fact, he or she is often one of the smallest of the lot. Sometimes, also there is a very unpopular one that all the others take a delight in hunting and bullying.

MILITARY WIRELESS TELEGRAPHY.

THE report of Major-Gen. Arthur MacArthur on the encampments for field instruction and maneuvers in the Pacific Division of the United States Army, contains much interesting matter regarding the workings of the wireless field-telegraphy, as reported by Major George O. Squier, Signal Corps. Major Squier calls attention to the known difficulty in transmitting electromagnetic waves over land as compared to that over seawater, and says that repeated experiment has shown the importance of good earth connections for both the transmitting and receiving antennæ of the wireless telegraphy. For best results it has been observed in general that the vertical wire or net should be carefully insulated from all supporting poles, guys or any electrical conductor connected to the earth, the object being to form an open vertical receiving circuit insulated in the air. "We may therefore," says Major Squier, "with advantage, as Fleming and others have done, regard the general function of the vertical receiving wire and its accessories, as serving to unite electrically the earth and space effects by which, through the agency of one of the forms of wave detectors, a sufficient amount of the energy of the radiating waves is localized to operate a suitable receiving device. It was from a general survey of the above established facts regarding the receiving conditions for successful wireless transmission of intelligence, that the writer was led recently to consider how far these conditions

may be fulfilled by growing vegetation, particularly in the form of high trees covered with green leaves.

"My attention was first attracted by learning from Major-Gen. Arthur MacArthur, United States Army, of a successful experiment made in July, 1904, at the military maneuvers of the Department of the Columbia, at American Lake, Washington, by Lieut. William M. Goodale of the United States Signal Corps, in which he found that in laying rapid telephone lines in a wooded country for the field-exercises of the army, a much better ground could be obtained by attaching the earth side of the instrument to an iron nail driven into the trunk of a tree or shrub, than by the ordinary and more laborious method of burying a conducting plate, or by driving an iron spike into the earth itself.

"At the subsequent joint military maneuvers of the Department of California at Camp Atascadero, California, in August, 1904, opportunity was afforded the writer to test the efficiency of this simple means of earthing telephone and 'buzzer' telegraph circuits in a country where, due to the extremely dry condition of the soil to considerable depths at that season, it was found very difficult, if not impossible, to use the ordinary single wire grounded circuit even when great care was taken in making the 'ground.' By using a tree, however, for a ground connection, a telephone or telegraph station could be established in a few moments, with excellent results.

"It is found that the conductivity of a growing tree in a healthy state, for telephonic currents, is such that the earth contact nail need not be at the root of the tree, but may be carried to a height up the tree of thirty feet or more, and the telephone used from that elevation with satisfactory results. Indeed, experiment shows that good communication can be maintained from one tree top to another with the trunks of both trees in the circuit. When the operator holds the ground wire in the hand, and completes the circuit to earth by merely touching a live twig or leaf, the transmission of speech is good. This permits the military scout to use the vantage point of the tree elevation for observing the enemy, while being screened from view by its foliage, and at the same time, to transmit by telephone to the distant station, the information thus obtained."

Major Squier then goes on to describe his experiments at Fort Mason, San Francisco, a grove of eucalyptus trees on the lawn in front of Major-Gen. MacArthur's quarters being utilized as a receiving station. The experiments were mainly qualitative and the apparatus used of marked simplicity. The electrical contact with the tree was made by driving a nail into the tree itself an inch or two above the earth line, so that the contact would be distinctly with the tree and not with the earth. The whole apparatus used consisted of a few feet of flexible lamp cord, a microphone with three dry cells, and a head telephone receiver mounted on a small board about ten by twelve inches. With the electrical contact at the lowest part of the tree stationary, an upper contact, by means of a nail driven into the tree, was shifted up and down the tree. The transmitting station was unaltered as far as possible, sending the letter S. It was found that as soon as the two contact points on the tree became more than three or four feet apart, faint signals were heard, which in general increased in loudness with the distance apart of the contacts up to the general region where the branches began to diverge, beyond which a further increase could not be noted. Careful experiments also showed that the effects

observed were actually due to electromagnetic waves from the tree itself, and not to the short wire between the two contacts.

The method employed in the experiments had the disadvantage of requiring the results to be interpreted by relative intensities of sound to the human ear, which method is well known to be unreliable in general, as compared with any method involving an instrument, for instance, where deflections may be read by the eye, yet the effects were so pronounced and unmistakable that they were readily confirmed by repeated tests. It was found that the upper contact point could be made either to a metallic nail or pin, driven into the tree trunk, its smaller branches, or by pressing the wire against its leaves, buds or flowers. Since a vertical wire, earthed at its lower extremity, possesses a potential node, and a current antinode for electromagnetic waves at approximately the point where the wire intersects the earth line, it was thought that a growing tree, which can be regarded as a vertical conducting cylinder, earthed at its lower end through its root system, would possess a more or less well defined potential node region at or near the intersection of the earth line with the trunk or stem of the tree. Experiment confirmed this, and the contact point at the base of the tree was therefore used, in general, as one of the advantageous points of connection throughout the experiments, and comparisons usually made from this point to others, both up and down the tree itself on the one hand, and in exploring the ground surrounding and adjacent to the tree, on the other.

Electromagnetic effects were also observed on the surface of the ground immediately surrounding the tree, and, still leaving the lower contact point in the tree, the surface of the ground was explored horizontally along it, with the other terminal, and from the results Major Squier argues that the effects observed varied because of the unsymmetrical distribution of the root system immediately beneath the surface, which root system readily conducts electromagnetic waves and may be considered as an extension of the antenna into the earth. He also found that when the lower contact point was removed entirely from the tree and the nail inserted in the ground itself immediately adjacent thereto, but not actually touching the tree at all, the signals were heard; thus the effects were received without any actual contact with any form of antenna; but directly from the earth itself immediately surrounding the foot of the antenna and under its electrical influence. In another experiment several trees of a large grove were connected in parallel by joining the upper terminals thereof to one terminal of the microphone, the other terminal of the microphone being to earth. Here, again, slight increases were shown upon cutting in different trees in succession, singly, and in combination. The slight differences noticed were probably due to differences in size and character of the trees, the resultant effect upon the microphone being merely that of the most efficient tree of the number being used at any one time. In conclusion, he says, regarding the use of trees as receivers for wireless telegraphy: "The efficiency of an elevated capacity area attached to an antenna is not wholly dependent upon the extent of such area, but also upon its general configuration, or, in other words, upon its capacity. In like manner, the efficiency of an artificial earth for grounding an antenna does not wholly depend upon the area of the plate buried in the earth, but also upon the shape and disposition of such surface, it having been observed that a given

area of earth plate is more efficient in the form of strips, radiating out from a common point, at the foot of the antenna, than in the form of a single circular plate. It appears possible, therefore, that the manifold and varied forms and shapes given by nature to the leaf surfaces of vegetation, adapt them for absorbing electromagnetic radition; while the general configuration of the root systems of trees, consisting of large radial root trunks, proceeding out from a common stem and supplemented by innumerable branches and microscopic hair roots and rootlets filled with conducting fluids, is not ill-suited for the conduction of electromagnetic waves into the earth. Again, the strength required in towers and masts for supporting antennæ wires, is provided in the antennæ here suggested, since a great tree with its natural buttresses, and its root system often extending deep into the earth, is well designed to resist the elements."

THE SYSTEMATIC TRAINING OF THE HORSE.

By Colonel A. H. C. Phillpotts, R. A.

(*Translated from "Revue d'Artillerie" for Proceedings R. A. Institution*).

AMONG those who study questions of equitation there has recently been much discussion of certain methods which have have given rapid and brilliant results in the hands of a large number of officers.

The methods referred to, being easily applied and easily experimented upon, we think it might be useful to explain them here so that all readers of the *Revue d'Artillerie* may have the advantage of being able to study them.

Captain C—— of the artillery it appears, noticed that there is often an objectionable tendency in a bit when applied to cause a horse to rein back.

In considering how to counteract this objectionable tendency he found that the only plan was to bring pressure to bear on the neck and shoulders of the animal by means of his hands.

About the year 1898 he became so convinced of the soundness of his theories that he laid down this formula: "In all paces of the horse, the effect of the action of the bridle on the horse's mouth, however strong it may be, is transferred to the hind quarters as soon as the horse is no longer in equilibrio." In order to replace the pressure of the hand, he invented a lungeing rein made to rest on the highest part of the nape of the neck, then to pass through the rings of the bit.

Among many unsympathetic people, he at last found one Captain de C—— of the cavalry who entered into his schemes with interest.

These two officers together applied the principles and methods to a considerable number of different sorts of horses. Troop horses, manège horses, hunters, race-horses. The quick and satisfactory results they obtained convinced them of the efficacy of the new method.

In this paper it is not proposed to include the examination of every possible combination and expedient which, having once seen and

understood the principle, it is possible to devise. Only three typical arrangements will be explained.

The necessity for some method of rapidly and efficiently training horses on which to to instruct the cavalry soldiers of the French Army who serve only two years, is at once apparent. A rapid method of training the troop horses is much required so as to produce quiet, perfectly trained animals in place of those one often sees in the ranks. Hard-mouthed, fidgetty animals, throwing their heads about, most discouraging mounts even to the keenest of volunteers.

With properly trained horses, the cavalry soldier is able to get through the hardest work demanded of him with comfort to himself and ease to his horse. It is now more than ever necessary to have cavalry quick, handy, and not easily deranged when moving at a rapid pace.

Will the application of these new principles permit of a solution of all the difficulties we now have and will it at the same time reduce the number of accidents at present only too numerous during the period of training the recruit?

Even supposing the results obtained, may not at once solve the questions categorically, they are nevertheless most encouraging.

Description of the Gear.

I.—Captain C——'s lungeing rein (1898.)

The adjustment of the lungeing rope on its bits and its arrangement on the neck are shown in Fig. 1:

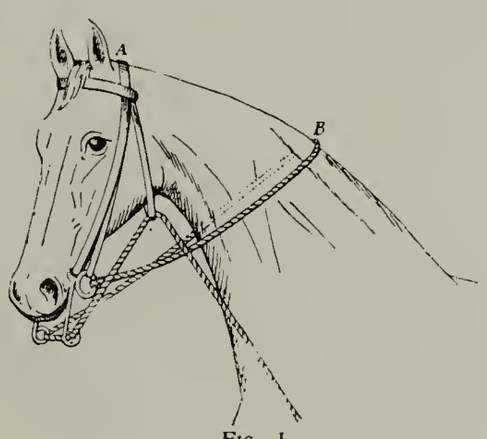


Fig. 1.

By the sketch it is seen how the rope can be adjusted to every possible combination of bits.

The rope can pass through one or two rings of the snaffle, or through one ring of the snaffle and one of the bit and so on. And these combinations may be both on the right side and on the left. We also see that pressure on the forehand is exercised partly at "A" and partly at "B." The position of the rope at "B" can be altered as desired and according to the temper of the horse. The pressure of "A" being due to the rope being brought through the throat lash.

The sketch does not show the arrangements which may be made for facilitating the easy working of the rope. There may with advantage be a ring on the throat strap and additional larger rings on the rings of the bits for the rope to pass through easily. The lunge is made of an ordinary hemp rope about 1 cm. (.394 of an inch) in

diameter. The part which goes over the neck might be made of india-rubber. Any other details in the manufacture and materials can be varied a cording to fancy.

The horse, first of all unmounted, is put on the circle with the apparatus on, which seems almost at once without the use of any force to induce the horse to submission.

The exercise on this lunge gives the animal to understand that he is being mastered, and teaches him the use of the bit at all paces. Circling a horse is at all times an excellent gymnastic exercise, but in this case, it becomes specially efficacious because the horse is properly placed and is made to extend himself while being kept at the same time under control of the instructor who should, if necessary, be supplied with a long whip.

The horse may be exercised on the lunge with an assistant up.

II.—SYSTEM OF REINS INVENTED BY CAPTAIN DE C—— (1900).

Captain de C——, having been accustomed to give a trial to every sort of scheme of equitation was able to extend his researches further than Captain C——.

He was consequently able to discover a method which permitted him rapidly to reduce the difficulties experienced with a horse when mounted, without using the lunge at all, unless this were specially necessary.

Among a large number of apparati acting on the forehand and on the nape of the neck, the arrangement devised by Captain de C—— in 1900 seems the simplest which could be employed in the army.

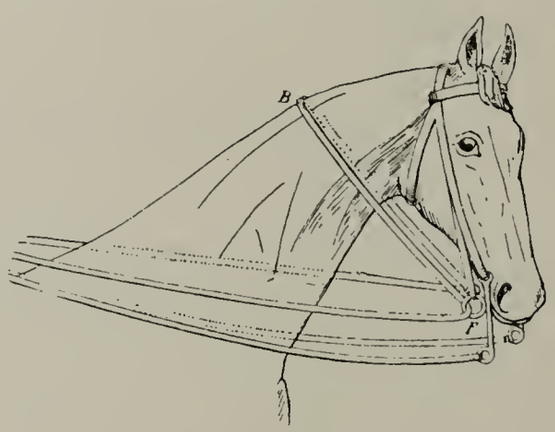


FIG. II.

As is seen in the sketch, Fig. 2, the arrangement consists in passing the center of the rein unbuckled over the horse's neck and then bringing the free ends through the rings of the snaffle on their respective sides and back into the hands of the rider where they are buckled together.

The point "B" where the rein rests on the horse's neck may be varied according to the horse and the object it is desired to attain. The rider can move it about at will. If the horse is inclined to get out of hand, the rein is placed toward the middle of the neck. If the horse tucks in his head, the rein is placed toward the poll and becomes a kind of bearing rein. Ordinarily the rein assumes a position something like this latter. This arrangement of reins is very powerful and enables the rider to place his horse's head as he wishes. Pressure

on the reins, instead of suddenly checking a pulling horse, stops him gradually. Then again, relaxing the grip of the reins permits the extension of the neck of which the rider can take advantage.

Captain de C——'s experience extended over a large number of animals.

In all cases of horses resisting training by rearing, plunging, kicking, rushing in the ranks, etc., he was invariably successful.

Even in the hands of inexperienced horsemen no difficulty was found.

It should be noted that this riding, running rein, equally with the lungeing rein, lends itself to every sort of combination of mouth-piece and every variety of make of material.

In some regiments this system has been adopted for the training of remounts. It certainly appears to deserve a good trial.

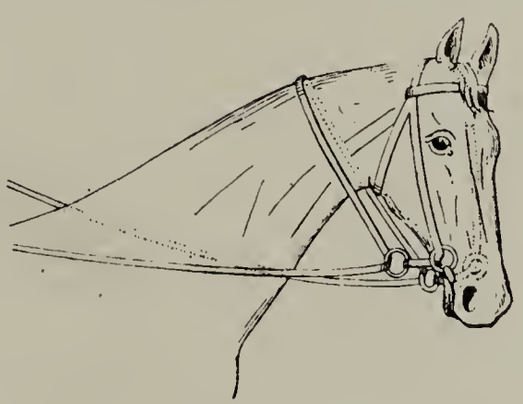


Fig. III.



Comment and Criticism.

"The Military Service Institution."

Journal U. S. Cavalry Association.

The Editor of the JOURNAL OF THE MILITARY SERVICE INSTITUTION is to be thanked for the General Index which he has just issued, and he and his able assistant, Capt. Thomas A. Roberts, Seventh Cavalry, are to be congratulated upon the excellence of their work. Too much praise cannot be bestowed. It was a large undertaking. The form of the work, its style, its convenient arrangement, its scope, the soft dead white of its pages and the clear black print of its type, all appeal to one.

In glancing through this index, one who has not kept steady pace with the progress of the Military Service Institution, is struck with the array of professional subjects that have been discussed in the pages of its Journal, and one has but to look over the index of authors (Captain Roberts' part of the task) to be convinced that most of the subjects have been ably treated, for in that list we find the names of most of the officers of our service—not all of them by any means—that have distinguished themselves as writers or otherwise since the Civil War.

And in looking over this index one cannot but be reminded, if one needs to be reminded, of the vast good the Military Service Institution has done for our service. When, on that day in 1877, General Stanley, General Fry, General Rodenbough and Colonel Lieber, issued the circular upon which the Institution was founded, they laid the corner-stone upon which has been builded all the professional culture existent among us to-day. And there is professional culture in our army, more and of a higher grade, taking it as a whole,

than there is in any other army in the world. And there ought to be. And it dates back to the founding of the Military Service Institution. All the other agents of our culture have followed in natural order, the Service School at Fort Leavenworth, the Cavalry, Infantry and Artillery Associations, each with its journal, the Lyceum, the examinations for promotion, etc.

But the professional culture of our officers has not been the only aim or the only achievement of the Military Service Institution; its field has been even broader; its purpose has been the general improvement of the military service of the Nation, not alone of the Regular Army but of the National Guard also. Scarcely a reform, scarcely a change for the better, has been wrought in the service within the last quarter century, but has been first suggested in the pages of its Journal.

Few of these changes have originated at the War Department, but, thanks to those in authority there, they have been read of it the pages of the JOURNAL OF THE MILITARY SERVICE INSTITUTION and put into effect. And through the War Department the influence of this Institution has reached the halls of Congress.

The Institution and its Journal are a quarter of a century old this year. Long may they live, and ever wax stronger in influence and numbers—the Institution in the number of its members and the journal in the number of its readers and contributors.

Every officer of the army ought to be a member of the Military Service Institution.

"Military Hygiene."

Brigadier-General A. A. Woodhull, U. S. A.

On October 2, 1862, General Lee wrote to Mr. Davis: "Strange to say, our sick are very numerous, * * *" and adds, what is and always has been the key to the whole matter: "Until the regimental officers can be made to appreciate the necessity of taking care of their men, keeping them under control, attending to their wants and comforts, and enforcing cleanliness, etc., I fear the sanitary condition of the army will not improve. It is the want of this attention and provision for comfort that causes our men so soon to break down under hardship."

Few recognize that in a body of men of military age, properly selected at enlistment, practically all disease is preventable. But it is true, and what may not a brave army intelligently officered accomplish if only its health is maintained. To care for troops so that they may remain efficient is the mission of military hygiene; and the immediate agents who should be charged with its execution are the officers of the line in co-operation with the medical staff. Such

knowledge is no part of their inner consciousness, and it is reached by a royal road no more readily than is any other learning. The natural leaders and instructors in this province of military efficiency are the medical officers. Not mere doctors, skilled in the cure of the ill and the care of the wounded, but officers whose theoretical study has been conditioned and developed by association with troops. It is a weakness of newly-raised regiments, speaking generally, that all their officers, medical as well as line, lack that special experience through which theory becomes practice. For a long time the average volunteer resents an officer's care. The common theory of the non-regular, although not formulated in words, is that the officer's particular province is to announce certain orders, so that appropriate evolutions may follow in due course; that he is a kind of animated and mobile phonograph, chiefly available for drill purposes, which often is the officer's own view as well, if indeed he does not look upon any other procedure as beneath his dignity. In reality the officer should supervise the soldier's going out and his coming in, his rising up and his lying down, his hair and his feet; he should know that he has neither chafes nor blisters, that the water he drinks is pure or is boiled, that he properly cooks his food, that his camp is drained and its refuse disposed of, and that, unlike good Episcopalians, he does those things that he ought to do and leaves undone those things that he ought not to do. Unless soldiers are thus carefully supervised until they reach the automatic stage, it will be found, as General Lee learned to his sorrow, that there is no health in them.

But volunteers are not the only sufferers through their own and their superiors' ignorance. A good commanding officer must be self-reliant; but that is not enough. He must have the courage of his convictions, but he should be willing to learn. When molecular change ceases, the body is dead; and when the mind fails to assimilate new ideas, it also is dead. It is really in the condition of Lazarus as described by Martha, an offence to people who are alive. What should be thought of a general who, in the exercise of his prerogative, defiantly drinks from a well against which the troops have been warned as being unwholesome? I did not personally witness this incident, but I believe that it occurred. A few years before the Spanish War, a chief medical officer, with the approval of the department commander, required his juniors to solve certain problems in military sanitation whose factors they might expect to meet in actual operations. As it happened, one of them proved an exact anticipation, on a somewhat smaller scale, of the conditions that materialized at Camp Thomas. Had the men who solved it on paper been clothed with authority, there would have been a different record. A new department commander at once stopped those exercises on the alleged ground of the expense of printing quarterly a couple of dozen copies of the problems. But there was no difficulty in continuing to

print general orders. Neither the army nor the country is ever likely to know the amount of discomfort, disease and death that has been due to inadequate *personnel*, and particularly that has followed inhibition through unintelligent control, which led to sanitary, not clinical, inefficiency. On the other hand, the miracle wrought by appreciative administrative support of efficient sanitation, in the happy interpretation of Walter Reed's scientific discovery, revolutionized the health of two nations and opened new possibilities for the world. How many generals could be depended upon, without this precedent, to authorize an attempted extermination of tropical mosquitoes in the hope of abolishing yellow fever? Notwithstanding this triumph, it remains true that, speaking generally, the authorities still view instruction in sanitation as an incident more than an essential of military efficiency; a permissible addition, like the ornamental bullion upon an otherwise serviceable sword-knot, instead of as a bayonet-clasp which makes the weapon itself more effective.

It is in the vigorous expression of the true doctrine that this essay has its value. Captain Traub starts with the postulate that the practice of military hygiene is essential for general military efficiency, hence it should be taught in common with other military studies. That is exactly true. Now, what are the facts? Besides the Army Medical School, where it holds a place by the very law of its being, it is part of the curriculum at the General Service and Staff College, which is "the only school in the army where it is taught with the dignity the subject demands." But even there failure to be graduated carries as its sole penalty the forfeiture of the right to a diploma. As the essayist suggests, it would be better to drop such an officer incontinently, than later to fill graves with innocent victims of his accumulated ignorance. At garrison schools for junior officers it is meagerly taught, again with no reported retribution for neglect. The special artillery schools are exempt, notwithstanding that arm lives under many of the conditions of sedentary military life; and the engineers also are supposed to have absorbed it by intuition, as a part of their special endowment of universal knowledge.

That the importance of military hygiene is not appreciated by those who have the ultimate authority, is best shown by its position at the Military Academy. The manner in which this subject—one cannot yet call it a study there—came to be introduced at all, and the procedure that debarred its acquiring the position commensurate with its importance, form a curious chapter undesirable to relate at this time. West Point, properly enough, sets the pace; and it has no warmer friends than the medical staff, who recognize its defects as well as its great merits. When it became necessary to recognize that there is such a science, what happened and what happens now? The senior medical officer is required to lecture to the second class about twenty times. The class has no duty beyond that of an

occasional unmarked recitation. No notes are required to be taken, no examination is held, no standing can be acquired. The service, excepting so far as the late lecturer is concerned, is purely perfunctory. The cadets may be said to acquire a bowing acquaintance with the subject and nothing more. They do not necessarily learn anything (every other subject is required to be studied), and in an institution where every incident, from deportment to examination, has a fixed value for itself and a relative value toward everything else, this has none at all. It is most effectually damned with faint praise. Can one expect the graduate to respect it, before, by active service, he learns that it is not all of life to live? By that time he will have forgotten the most of what he heard in those spring afternoons, and he may or may not make it up.

Military hygiene should be a distinct course of study for the first class, the men who are about to serve with troops; and it should have a fixed and real value proportionate to its practical importance. The instructor, or professor, should be selected for that duty and should have adequate local rank while the detail runs. It would be just neither to the officer nor to the cadets to impose that service upon the senior medical officer present, who may have been assigned there for very different duty than that of teaching; for to instruct such a body of young men requires special qualifications. The inborn feeling of the Academic Board is that no one but a graduate understands West Point. That is the natural offspring of *esprit* and conservatism. Conservatism is all very well, but if it be true that a cadet has used his father's text-book and found his successive lessons to be precisely those that were marked out day by day for his father's study thirty years before, it may be that conservatism has become stagnation. At all events an intelligent medical officer, with a trained mind and familiar by recent service with the requirements of the troops on whose account the Academy exists, may safely be trusted not to overthrow the institution. Would it really do harm were such an angel occasionally to trouble that pool of healing, so that its virtue might become more active? Work enough can readily be found for a competent instructor, so that the detail should not degenerate into a sinecure. The canonical objection would be made that there is no time, that the course is fixed. "Disjoin the parts and reassemble them. Make a new schedule. If any institution cannot teach the subjects that belong to its province, something is wrong. There was a five years' course in the late fifties; why should not history so far repeat itself? Any civil college that did not keep abreast of the literature and science of the day would soon cease to exist.

This comment has already passed the ordinary bounds, and other features of this interesting paper must be left to silence. That Captain Traub, already a Gold Medalist of the Institution, has won this

practical Seaman Prize should be a matter of sincere congratulation: but that a graduate should so clearly see and so plainly point out the necessities of the case, is an omen of the brightest augury.

PRINCETON, N. J.
January 28, 1905.

Major D. H. Broughton, 11th Cavalry.

Timely, possessing a high order of literary merit, and well deserving the honorable distinction of having won the Seaman Prize, Captain Traub's Essay on Military Hygiene should command the respectful attention of all who have the welfare and efficiency of our army at heart.

It seems strange that in this enlightened age it should be necessary to argue for a better understanding of so important a subject. Yet such is the case. But a most remarkable feature is encountered in the fact that the argument meets with little verbal opposition. Everybody is willing to admit that military sanitation and hygiene, *the care of troops*, should be as perfect as possible. No one will deny that if troops are not in proper condition, campaigns may be lost and the best laid plans of general and staff come to naught. But here the matter stops. We recognize the evil but are not yet ready to apply the remedy.

The study of hygiene is not a new thing. From the earliest times men have sought to discover means of prolonging life, panaceas to cure all ills, "fountains of perpetual youth," and in the search they have gradually come to realize that right living, whatever that may be, will add to a man's years. And the laws of right living are summed up in the word *hygiene*. Yes, people will admit without argument the necessity of observing hygienic rules, but the masses make little effort to follow them, and herein is the difficulty. They bow to the weight of reason, but still are skeptical. They must be taught, and, unfortunately, experience in the form of plagues, disease and death seems to be the only really efficient teacher.

In the Philippine Islands to many of the ignorant barrio people cholera is a big black dog with evil attributes wandering through the country. When he stops in front of a house someone will be sick therein. Teaching hygienic laws to such people without a big stick, telling them that the black dog is really a microscopic parasite whose wanderings may be controlled, is of little avail. And so with others more enlightened. Doctors prescribe, but lacking faith, we throw the medicine out of the window. Moreover, observing hygienic laws involves trouble and cost. It is easier to trust to luck; easier to drink water direct from the faucet than to

boil it. We do not yet fully realize the paramount importance of this subject. Must it be brought home to us through the experiences of another war? Is another Santiago campaign necessary?

In time of war it is our policy to depend upon our citizen soldiery, upon the National Guard and volunteers, and unless they, especially the officers, understand *the care of troops*, which they must learn in time of peace, during the period of preparation, history will again repeat itself. There will be more typhoid-fever camps, more Montauk Points, and the people will again stand aghast and angry, though in a measure at fault themselves, for the advice of all the doctors in the world cannot make an army take proper care of itself if the men do not willingly and intelligently lend their assistance. Our soldiers do not realize the necessity of taking precautionary measures and therefore disregard them.

During the cholera epidemic in Batangas in 1902, strict orders were given prohibiting the eating or drinking anything obtained from the natives. A hospital attendant was sent to that station and violated the sanitary regulations by eating in a native restaurant. In three days he died of the dread disease. Unfortunately the poor fellow could not profit by his own experience but the other soldiers did and there was little trouble in securing compliance with the regulations after that.

But public opinion is slowly changing and the people are coming to believe that medical men know what they are talking about and that there is really something in hygienic laws after all. The following clipping taken from the "Outlook" is an evidence of this trend of the public mind.

PREVENTABLE DISEASES AMONG SOLDIERS.

"From the standpoint of a humanitarian and a lover of his kind, it was to me a positive delight to visit that great series of hospitals from Tokyo to Sasebo, with their long wards filled to overflowing with wounded, suffering soldiers, the legitimate victims of war, their faces full of health and hope, despite their fearful wounds in the long, hard campaign of five or six months in Manchuria, their chief desire to know how soon they could join their comrades, and to contrast them, in memory, with the vivid picture of the poor, wan, emaciated and almost helpless that crowded the wards of our hospitals in Cuba and Porto Rico, in Tampa, Chattanooga and Camp Alger and Montauk Point, in 1898, and in the Philippines in 1899–1900—the innocent, unwounded, and illegitimate victims of another conflict which, in comparison with the one now waging, would be considered no more than a skirmish among outposts.

"If wars are inevitable, and the slaughter of men must go on (and I firmly believe that wars are inevitable, and that most of them are ultimately beneficial), then let our men be killed legitimately, on the field, fighting for the stake at issue, not dropped by the wayside through preventable diseases, as they were in the Spanish-American War—fourteen hundred for every one that died

in action. It is for the fourteen hundred poor fellows who are sacrificed, never for the one hundred who fall gallantly fighting, that I offer my prayer."

But in the regular service we have little excuse for a poor understanding of military hygiene or for a careless and indifferent enforcement of its principles. True, the majority of our soldiers enter the service with little knowledge of, or regard for, these principles, but they are under the police power of military discipline and can soon be made to conform thereto. The enforcement of discipline is the legitimate sphere of line officers. Medical officers may advise as to *the care of troops* but the actual responsibility therefor falls upon the officers of the line. How can they discharge so important a duty unless they understand it? An officer's value to the service should be measured not only by his ability but by the manner in which he does his duty. The question, then, of the care of troops resolves itself into one of a proper education of the officers of the line and an efficient enforcement through them of the requirements of military hygiene.

Naturally officers will devote more time to that part of their profession which seems to receive the greater approbation from those placed over them. If the War Department apparently attaches little importance to the subject of military hygiene, to "the care of troops," it will receive little attention from the officers and men. If our military schools scarcely touch upon the subject the natural inference will be that it is of little importance. It is taught at the Military Academy in the form of lectures, but no weight is attached to the subject. Every graduate knows how little attention is given by cadets to anything not bearing upon their graduating standing.

A few years ago the course at the Academy included a department of geography, history and ethics. Ethics was taught in the form of lectures to the fourth class. Each cadet was urged "to make of himself the very best man he was capable of becoming," but no graduating value was attached to this doctrine. The instruction in ethics was regarded as a joke.

Military hygiene, better termed *the care of troops*, should be taught and given a value at West Point. It should have a place in the curriculum of our service schools having to do with the line of the army. But especial prominence should be given it in the garrison schools. There the officer has an opportunity of observing and practicing what he learns, and it should be placed in the very first year of that course instead of in the last.

In the army, military hygiene has been considered as pertaining particularly to the domain of the Medical Department, and so in a measure it does, for that department must watch over the health of the army, but its duty in this respect, as Captain Traub points out, is advisory only. Medical officers take the man when he enters

the hospital, while line officers are responsible for him at other times. For this reason I would suggest that the term "Care of Troops" be substituted for "Military Hygiene" or used in connection therewith. Any officer can see that it is his duty to take care of the troops under him, while the term military hygiene is more or less in the clouds, and as "the care of troops" is particularly in their province, line officers, under supervision of competent medical officers, should be made instructors of this subject in our military schools. This will tend to a better understanding of the subject and add to its apparent value.

It will not be difficult to institute a study of military hygiene in the army, but even then its principles will not be rigorously enforced unless our superior military commanders take an active interest in the matter. Company commanders in their companies, post commanders in their posts, and inspectors everywhere. The War Department itself should take the initiative by including "the care of troops" in the list of subjects upon which officers of the higher grades are examined for promotion, and not confine it to second lieutenants.

As a matter of interest and to show how very necessary it is for the very head of the army to take the initiative in questions of this character, and to show also that junior officers cannot always be held responsible for unsatisfactory conditions, the following letter from the War of the Rebellion Records * is quoted:

SURGEON-GENERAL'S OFFICE,
September 7, 1862.

"HON. EDWIN M. STANTON,
Secretary of War:

SIR:—I have the honor to invite your attention to the frightful state of disorder existing in the arrangement for removing the wounded from the field of battle. The scarcity of ambulances, the want of organization, the drunkenness and incompetency of the drivers, the total absence of ambulance attendants, are now working their legitimate results—results which I feel I have no right to keep from the knowledge of the Department. The whole system should be under charge of the Medical Department. An ambulance corps should be organized and set in instant operation. I have already laid before you a plan for such an organization, which I think covers the whole ground, but which I am sorry to find does not meet with the approval of the General-in-Chief. I am not wedded to it. I only ask that some system may be adopted by which the removal of the sick from the field of battle may be speedily accomplished, and the suffering to which they are now subjected be in the future as far as possible avoided.

"Up to this date 600 wounded still remain on the battle-field in consequence of an insufficiency of ambulances and the want of a proper system for regulating their removal in the Army of Virginia. Many have died of starvation; many more will die in consequence

*Series III, Vol. II, p. 525.

of exhaustion, and all have endured torments which might have been avoided. I ask, Sir, that you will give me your aid in this matter; that you will interpose to prevent a recurrence of such consequences as have followed the recent battle, consequences which will inevitably ensue on the next important engagement if nothing is done to obviate them.

I am, Sir, very respectfully, your obedient servant,

WILLIAM A. HAMMOND,
Surgeon-General."

If I may be permitted I shall take this opportunity of making a suggestion which conditions seem to warrant and possibly demand.

We have in use to-day a valuable little book on Military Hygiene but it sells for $1.50 when it should cost not more than 50 or 75 cents. Extortion is odious in any form. Let a competent board be convened to compile or prepare a manual on military hygiene, or "the care of troops," of convenient size and containing such fundamental and necessary principles as line officers should know, and also including instructions in first aid. This book should then be issued or sold to the army and National Guard at cost.

"Combined Maneuvers."

Colonel Jacob A. Augur, Tenth Cavalry.

We shall start our premises with the assertion that combined maneuvers are essentially necessary if we expect to be prepared for actual war; not to wait until the actual breaking out of hostilities to put into practice something we should have had before, some experience, at least, in the movements of large bodies of troops to the rendezvous, and practical experience of troops in the field of combined maneuvers. This is absolutely essential for everyone, officers and enlisted men of the regular service, and more particularly in the case of the National Guard of the country who receive little, if any, instruction in this most important duty, as nearly as can be simulated to war conditions.

This, I believe, is the consensus of opinion of all officers, both regular and of the National Guard. Colonel Wagner's article on combined maneuvers is a most timely contribution, for it is a most thorough and exhaustive treatise on the subject, and shows to what extent maneuvers in our country have been carried on. Its history is of recent date; the maneuver camps but six, and just as there seemed a prospect of its being firmly settled, that this system of a yearly meet, so to speak, had come to stay, we are met with the cry "too much expense," and for this year there will be no camp of maneuver.

It seems useless to try to convince the layman how necessary it is for the welfare of the country and for the country's army, when

to a military man it is self-evident that such varied instruction as these maneuvers afford to all, is of vital importance to us as a nation, if we are ever to lay claim to being in a state of readiness when the war call sounds. Because these arguments are sound, it does seem that a spirit should inspire others who have the power to institute the maneuver camps, to respond and declare its importance, so that every year will see combined maneuvers in some section of our country. With us it is a new departure, and the results have shown the wisdom and value of them. "'Tis a pity 'tis true" that our aims and hopes are to be snuffed out, and extinguished on the score of expense.

In all maneuvers there should be two distinct camps, separated by a reasonable distance, in preference to one single camp. I am thoroughly in accord with all of Colonel Wagner's remarks as to umpires. At the maneuvers at Manassas, the umpires were insufficient in that wooded terrain; battalions being separated or sent off on detached duty were not seen again during the action by the umpire of that regiment, and no account could be rendered of their doings. Each battalion should have its own umpire. This requirement would necessitate the detail of a good many officers, but you get better and more satisfactory results. It is essential that all umpires should meet at the central camp; and for the good of all, the day's action should be discussed, for it is of the greatest benefit to all concerned, which is the main reason for having the maneuvers. I am in thorough accord with him in his remarks as to which side is the victor.

It has been remarked by the press and individuals that at Manassas the work was too hard and too strenuous for the National Guard. There is no doubt the four days' continuous work was a severe task and strain, yet the benefit the officers and men received fully repaid them for these strenuous days. Officers will never again permit their men to go hungry; the men will never appear in any but serviceable and suitable walking shoes.

In order that the National Guard may be better prepared to start on a more equal footing with the regular troops and not delay the maneuvers with preliminary work, there should be a regular system instituted by all the State troops, to devote most of their time, while in their camps of instruction, to learning what is most essential for practical work, viz.: open order formation for attack; patrolling; security and information; how troops should march and camp, how to hustle for themselves and not be so dependent, and to be imbued with the fact that because you go to camp and live in a tent, that it is not a lark and a frolic, but means *work*, *work*, hard work.

If the above instructions were given in place of precision of drill in manual and close order, there would be a vast change for the good, and the National Guard would arrive at the maneuver camp far

better prepared, and would leave, feeling that their service there had left them the satisfaction of having been of inestimable value, and that, when the occasion arose, they would feel. We all are ready, and do not have to learn our A B Cs. In fact, make them confident of themselves, which is the degree of perfection we are striving for in these combined maneuvers.

May they annually be permitted; and with economy, coupled with judicious management, the expense can be minimized, and not be considered an extravagance. The results obtained are well worthy the outlay, and it is hoped that Colonel Wagner's article will impress itself forcibly upon public opinion to the extent of its seeing the need of this important military duty being furthered in every possible way.

Major W. E. Birkhimer, Artillery Corps.

The object that it was hoped would be attained by the Militia Act of January 21, 1903, was the successful co-operation in exercises on the practice field of regular troops and the organized militia. The former will be benefited in the facilities thus afforded for maneuvering upon a more extended scale, both as to country and numbers, than ordinarily is the case; while the militia are not only benefited in a similar manner, but also by being associated with those who are versed in the minutia of field-service incidents, such as camping, sanitation, the economical and proper use of the ration, and many other matters of primary importance for the soldier and the successful commander to know.

No experienced officer or soldier will gainsay the fact that there is opened out here a field for useful exercises for all concerned.

There is, however, the very vital matter of how joint-maneuvers of the character mentioned best may be utilized to accomplish greatest good. Here is room for exercise of sound judgment, and, as is to be expected, opinions are found to differ.

A fact of first importance in this connection is that the time that the organized militia can devote to such joint-maneuvers is necessarily limited, and ever will be so. The *personnel* are business men who largely devote their season of recreation to these field exercises; but two weeks is about the most that any thus can get away from their private affairs, this time running down to one week in many cases, with resulting limitations upon the time that actually can be spared upon the tented field; and the latter time is that only which really counts for much in the sum-total of joint-maneuver benefits, although experience in transportation, entraining and detraining of troops is not undervalued.

One result is that the militia cannot be carried by railroad or steamer very far, as every hour thus occupied reduces materially

the time that can be passed in the really vital part of the exercises, namely, the working out of problems in the joint-maneuvers. It follows as a corollary from proposition, that, unless facilities for concentration of troops are extraordinarily good, the assemblage of organized militia will have to be effected somewhere in their States or the immediate vicinity. The transporting them long distances consumes too much valuable time, that cannot be spared for such purpose. It follows, further, that, as a rule, relatively small numbers of organized militia can with greatest advantage be assembled at any one place, making the entire number of troops on the ground, regulars and militia united, not more than ten nor less than five thousand. Nor is this the disadvantage that it might seem, as restricting the scope of the maneuvers. On the contrary, one of the experienced and observant general officers who commanded at these exercises last year expressed the belief that, in the light of what was learned there, it is much better to have a small number for a longer, rather than a larger number of troops for a shorter, time; this, contrary to previous ideas. Time spent on the maneuver ground is the vital matter.

Other propositions flow from this fundamental one.

This time should be utilized to best advantage. Here is the rub. What is to best advantage? Here is where opinions differ. Some of the militia would spend it largely in barrack-yard drills, and learning the first elements of extended order exercise. Other commanders would suspend exercises at 3 P. M., march the troops back to their camps, reoccupying as nearly as may be the 3 P M. positions of the day before the next morning; thus marching and twice counter-marching on the same ground. The objection to the former proposition is that it uses up time that should be devoted to the higher branches of the soldier's art in doing things elementary in nature and that can and should be learned at home. The objection to the latter is that troops are unnecessarily fatigued, considering the work ultimately accomplished, and time consumed in marchings back and forth on the same ground, instead of having, as wholly impracticable, the troops move out equipped for their work, to camp, if necessary, where night overtakes them, as would happen in actual campaign.

Too much should not be attempted at these maneuvers. So much that is of importance for officers and soldiers to learn and then practice, and yet which lies wholly within the limits of the possible of attainment, that the entire maneuvers well may be restricted to these more modest efforts.

The rationing the troops; camping in a sanitary manner and maintaining a sanitary camp; the disposition and handling of the sick, either actual or simulated; the marching of troops in close or extended order; the assuming of various formations incident to cam-

paign; night marching under various conditions, and many other object-lessons, may be set the troops and learned by them in such manner as to be of great value to the practical soldier, whatever his sphere of duty in the field. The sham battle should be rejected. It is only a sham of the flimsiest kind. There is enough that is good to do upon these occasions without such faction fights. It is noticed that at one of the maneuvers the umpire was instructed to announce his decision as to the result of the battle, but the plan appears to have been abandoned as injudicious. The latter decision was in every way wise. To attempt to foist occasions, where blank cartridges only are used, into the category of battles will do for mere stage-play but not for real soldiers. It mocks the supreme moments in human existence. Neither can either generalship or leadership be predicted from affairs alone where only blank cartridges are used. All this is straining after the unattainable on such occasions, and, to this extent, neglecting the less ambitious and more worthy program of confining maneuvers to the movements before enumerated as advantageous, or others of their kind.

In some instances the organized militia complained of the hardships of the marches. On one occasion, according to the record, a commander was promised a battalion at a certain place and yet not 50 per cent. arrived there, the rest falling by the wayside. As an illustration of the requirements of war, this experience was wholly misleading. Yet these troops believe they were called upon to do greater marchings during these maneuvers than they would have even in campaigns. Nothing could have been further from the fact. Without drawing upon the experiences of the Civil War, or of the Philippines, or Cuba in 1898, to prove this, an instance from British experience in South Africa is at hand and to the point. On February 12, 1900, the Seventh Division, starting at 7 A. M., lost many men dead during a march of sixteen miles, prostrated by heat and thirst, twenty-one deaths in the Fifteenth Brigade due to this cause alone. On the 13th of February, 1900, the cavalry and horse-artillery lost many horses on the march, due to heat, the latter alone losing, due to this cause, fifty-nine horses dead.

Of course, one reason for the organized militia falling out when it suits them on the march is the fact that no penalty is attached to the act that appeals to men who will do this in a nearly wanton manner. It appears that the Summary Court, as we practice it in the Regular Army, is not a disciplinary instrumentality to be booked against delinquent militiamen on these occasions; at least their pay from the United States then cannot be so forfeited. Therefore, if it pleases the militiaman to fall out when he wishes, regardless of necessity, there is no really effective disciplinary measure to be enforced against him. However, it doubtless is true that the militia are really unprepared for anything like strenuous work when they

first take the field. This habit of life makes them soft, and, more than that, the shoes they wear are wholly unsuited, as a rule, to hard marching. This softness can be in a measure corrected by taking things easy at first; but the matter of proper shoes cannot be corrected after they arrive on the maneuver ground. They should all learn by experience already had, and the States should afford their troops facilities for getting good marching shoes. When they do this we may expect a great reduction in the number of those who fall out of ranks at the joint-maneuvers, a practice so at variance with true military spirit, and which reflects so upon the whole body of the organized militia.

San Francisco, Cal.,

January 23, 1905.

Lieutenant-Colonel Alfred C. Sharpe, U. S. Army.

Seventeen years ago in an essay published in this Journal, a plan was proposed whereby the national and State troops might be brought together in annual maneuvers.* It was realized that no instruction of this kind could be undertaken by the army without the co-operation of considerable numbers of auxiliaries—that is, National Guard or militia organizations, and to this end it was suggested that a system of State, district and national encampments should be instituted, in which a progressive course of training could be carried forward. The intervening years have given time for further reflection, and some additional opportunity to observe. We have seen the National Guard of many States in many camps in both peace and war; and during the past three years under specially favorable conditions at the maneuvers in Kansas, Kentucky, Ohio, and Virginia. It is fair to presume that the best troops, or at least those who were considered among the best, were selected for war service, or to represent their States at these maneuvers. And yet, it was the consensus of competent opinion in all these camps that very few of these auxiliary troops were prepared to enter with the maximum of profit on the advanced instruction for which the maneuvers were designed. After witnessing the conditions at Chicamauga and the confusion at Tampa, we surely did not need the additional experience of the maneuvers to convince us that in this great school, as in all other lines of instruction, we should establish a progressive course, advance by degrees, and make haste slowly. To allow the States to make their own selections, and send to the camps their best or their worst, as local (and perhaps non-military) influences may determine, will give us year after year the same heterogeneous mixture, and effectually

*Prize Essay, 1887, by First Lieut. A. C. Sharpe, U. S. A., The Organization and Training of a National Reserve for Military Service.

retard all true progress. The criticism to which Colonel Wagner refers was very justly made "that so far as some of the militia organizations were concerned, it was like placing a lad in a university before he had finished his course of common school studies." It seems quite obvious then, that the most urgent need of the system which we are trying to develop to-day, is a more thorough elementary training. This should begin in the armory, where the individual training of the soldier should be completed, and where he should learn something of guard duty. The next step should be the State camp where battalion, extended order, and possibly regimental drills can be had, where guard duty can be learned, and administration and sanitation given practical demonstration. All organizations participating in the State camp should be allowed to compete for detail at the district camp the following year, and no troops should be permitted to advance to higher courses except through this competition. The inspectors who make these selections should be well qualified officers of the Regular Army. These district camps would resemble in some measure, or be an improvement, rather, upon our present maneuver camps. They should be under the command of army officers, having associated with them the available Federal troops of the district, and should carry forward a course of problems in minor tactics. The strength of these camps would not exceed three or four brigades, the distance to camp would be short, a minimum of time would be wasted in travel, and the cost of transportation would be comparatively small. Having ten or twelve of these camps every year in as many districts would be of far greater and more general benefit than one or two large camps with only one-half of the States of the Union participating. Following the same system of competition in the district camps, a very select corps could be obtained for a national encampment, and this could be made, as Colonel Wagner suggests, of sufficient strength to afford a very excellent school for generals. Whether this national encampment should be held every year or every second year would depend on the state of the appropriations, but, if the National Guard organizations were permitted to compete for the honor of representing their district, and the instruction was carried forward systematically, progressively, judiciously, it is probable that the appropriations would be forthcoming.

I agree very heartily with many of the suggestions advanced by Colonel Wagner, especially with reference to umpires. There is no reason why an umpire should wear the uniform of the side he is with. A plain white suit would do as well, and better. He should be well mounted, provided with an orderly, and should change sides from day to day. The problems should not follow each other so closely as to prevent him from making up at least a brief report, and the camps should not be so large and widely separated as to interfere

with the assembly of the officers to hear the reports and the comments of the chief umpire on each problem. This feature was found impracticable at Bull Run last year, and was a most lamentable defect. It is probable that many officers went home from that campaign without knowing how the plans were executed. With no one to criticise or commend, the same errors might be committed, as Colonel Wagner has said, day after day, and the zealous and efficient receive as little recognition as the ignorant and incapable.

Following is the organization of districts proposed in 1887, based on the Congressional representation and strength of the organized militia at that date. I am more than ever persuaded that some system along these lines must be evolved before we can hope to realize a progressive course of training:

MILITARY DISTRICTS.

No	States and Territories	Congressmen	Organized Militia then in service.
1.	New England States	26	11,771
2.	New York	34	13,230
3.	Pennsylvania and Delaware	29	8,254
4.	New Jersey, Maryland, District of Columbia and Virginia	23	10,027
5.	North Carolina, South Carolina, Georgia and Florida	28	11,895
6.	Alabama, Mississippi, Louisiana and Texas	32	8,206
7.	W. Virginia, Kentucky and Tennessee	25	3,762
8.	Ohio and Michigan	32	8,638
9.	Illinois and Indiana	33	6,334
10.	Iowa, Wisconsin, Minnesota, N. and S. Dakota, Montana, Nebraska and Wyoming	31	9,418
11.	Arkansas, Missouri, Kansas, Colorado, New Mexico and Utah	29	7,005
12.	Arizona, California, Nevada, Oregon, Washington and Idaho	11	7,226

"Cardinal Vices of the American Soldier."

The Army and Navy Journal.

The last number of the JOURNAL OF THE MILITARY SERVICE INSTITUTION contained an article with the above title by Maj. Robert L. Bullard, Twenty-eighth Infantry, which will probably excite controversy among officers who have hitherto believed they had a fairly correct idea of the short-comings of the American officer and soldier. Major Bullard names as the "cardinal vices" of our soldiers "a spirit rebellious and insubordinate to authority; excessive and unnecessary wants, wastefulness; a deficient sense of the seriousness and the obligation of the enlistment oath; intemperate criticism of superior

authority, a loose tongue, selfishness, self-seeking, a contempt of humble things and duties."

While the above enumeration perhaps lends itself to disorganized militia commands, and might apply to a negligible percentage of our regular officers and men, we cannot believe that experienced officers in general will agree with the writer that these are the "cardinal vices" of the American soldier. The cases in which we have encountered a "spirit rebellious and insubordinate to authority," can certainly be counted on the fingers of both hands, in an experience of a good many years. Recruits have not only displayed little "resentment under discipline," but have as a rule been the most subdued individuals of the organizations which I have commanded. The American soldier may to a certain extent be wasteful, but it is usually an acquired trait, and develops with lack of proper supervision by his superiors. The soldier is not wasteful of anything which concerns his personal comfort, and it only requires the firm and unyielding will of the immediate commander to discourage wastefulness of public stores. In other words, wastefulness is a trait of character which will develop among any aggregation of individuals in which the sense of responsibility is not constantly brought home. Soldiers, especially, are like so many children, requiring constant watchfulness and repression of irresponsibility.

In our country it is unfortunately a fact that a tendency exists among all classes to regard the oath of enlistment with lightness. But this exists quite as commonly among civilians as soldiers, and the fact that the State governments give so little co-operation in the apprehension of deserters, and that civilians in general assist and shield deserters, goes a long way towards creating a feeling among enlisted, men, that desertion is not the heinous offense that it really is. The serious nature of the offense will never be brought home to all concerned until the Government traces and punishes deserters with the same assiduity that it manifests against counterfeiters, and other violators of the federal law.

Loose talking and intemperate criticism in any military organization—company, battalion, or regiment—is usually an index to poor discipline. Moreover, it is not confined to military organizations, but develops and thrives wherever lack of proper restraint permits its presence. The commanding officer who experiences its evils has usually either himself or his predecessors to blame for a state of affairs which made such intemperate criticism possible.

But Major Bullard goes even still further, and arraigns certain of his Philippine comrades in this remarkable statement: "It is the recent experience of many of us to have seen officers of the United States Army who have been years in the service, by opinion and conduct nullify over wide regions and render ineffective the settled and well-considered policy of their government, because they were not

in their words, 'in sympathy with the Government's policy in keeping the islands.' This was the development of the vice in their cases. Having seen this, one thinks less harshly of the character of others, who, forty years ago, with views under like conditions, were square and manly and soldierly enough not to remain within our lines, but joined the enemy in the open field."

It must be confessed that this is a pretty serious charge, but fortunately, even if true, can hardly admit of application to our army at large. In other words, Major Bullard's severe and pessimistic arraignment of officers and men, applies to but a small fraction; and the panacea for this outcropping of the Old Adam, is as in all armies from the time whereof the memory of man runneth not to the contrary, *discipline*.

The article creates the impression that the writer has had the misfortune to be thrown with an exceptionally ill-disciplined and insubordinate outfit.

CANDOR.





Reviews and Exchanges.

Lee and Longstreet at High Tide.*

MRS. LONGSTREET has written a supplement to Gen. James Longstreet's most interesting book entitled "From Manassas to Appomattox."

From its title page we are led to expect a simple discussion of the relations of General Longstreet to General Lee during, and subsequent to, the Battle of Gettysburg; but Mrs. Longstreet has deemed it wise to write of her husband's life, and she has produced a book of rare value to those interested in the United States Army since 1836.

One reads the narrative of the devoted wife with a tender sympathy, and if, as an officer of the Army of the Potomac, he has been in the field opposed to the troops commanded by Longstreet for four long years; and, if more than this, he has stood and watched Longstreet's command during the whole of the battles of July 2 and July 3, 1863, at the Battle of Gettysburg, he eagerly seeks to add, to the testimony Mrs. Longstreet cites, his own attestation to Longstreet's wonderful aggressive action in every battle, and to substantiate her claim to his never-to-be-overestimated influence and to his wisdom in counsel on every field in which his command was present, as this has been presented to us through their own testimony, as brought to us through their own histories of the great Civil, War. Nothing that Longstreet did, no move that he sought to make was under valued by Union generals. When Longstreet fought us we knew how earnest was the work before us; we felt how difficult it was to defeat or to stay the progress of a command under such a leader.

For wisdom in counsel, for impetuosity in attack, for staying qualities, for gallantry in action, Longstreet stood, with us, the ablest, the most to be feared, of all the Confederate generals.

For such a general to be attacked by those who misunderstood the man and by those who intended to render Appomattox of no real importance, who desired to foster ill will, and who hoped to revive slavery and to maintain the right of States to secede from this Union, was not unexpected. It was a dreadful blow to these men—this

*"*Lee and Longstreet at High Tide:* Gettysburg in the Light of the Official Records." By Helen D. Longstreet; Published by the Author. Gainesville, Ga., 1904. Electrotyped and printed by J. B. Lippincott & Company: Philadelphia.

crowning act of patriotism on the part of Longstreet—his acceptance of office under Grant. Why should he, their greatest general after Lee, lay down the sword, when they had only sheathed it?

It is to be deplored that Mrs. Longstreet considered it of any moment to refer to General Gordon's book, or to any charges against Longstreet, coming from a writer so unbalanced, so dreamy; always overestimating his own influence, and deploring the want of appreciation on the part of his superiors of the impossible tactics and incomprehensible strategy, as he says in his book, so often proposed or urged when, in his opinion, his commanding officers needed stimulation.

Pendleton's charge, made in 1873, is absolutely blotted out by Pendleton's official report of 1863. How the man could have forgotten the part he played on the field of Gettysburg and could have written such utterly impossible things is beyond our comprehension. But Pendleton, in 1873, was of the unreconstructed number, and he wrote for the mass of his confederates—Longstreet was to be destroyed—he had become a leader in reconstruction.

If the reader of those lines be of those who have been led to believe that Longstreet disobeyed General Lee at Gettysburg, let him read this work, published by Longstreet's widow. He will be undeceived; and it is by the testimony of the officers of Lee's staff that he will be made to view the conduct of Longstreet as beyond censure, his advice strategically correct, his example encouraging, his actions gallant and patriotic.

We believe the story of Longstreet. His clear, honest, truthful, statement of his battle of July 2, 1863, at Gettysburg is sufficient for the most of our writers; we have no sympathy for those who, politically opposed to Longstreet, presumed to falsify history; we do not find anyone who reads the history of the Civil War willing to acknowledge that the detractors of that great corps commander ever made out any plausible case. We do believe that they would not have dared to attack his reputation had R. E. Lee lived to tell the story of the attack.

A defense of Longstreet! Can it be that a sufficient number of people of any position in the South believe that Longstreet disobeyed Lee on July 2, 1863, at Gettysburg to render a defense of this great soldier necessary or dignified.

Who was to order an early attack on Meade's left on July 2d? General Lee himself. And Lee did not do this. His own staff officers state that General Lee did not determine to make this attack until about noon.

The Third Corps was not moved out until about 2 P. M. When it was found to be too late to restore that corps to its position, the Fifth Corps and the Second Corps were sent to sustain and support it. Meade was too good a soldier to fail any corps commander when his troops were in jeopardy, and on this occasion he was prompt to engage and to repulse the columns of Longstreet. At an earlier hour Longstreet would not have had sufficient troops in position to overwhelm the Third Corps even if it had been moved out to the position in which he finally found it.

Lee did not give to Longstreet the order to attack until the afternoon of the 2nd of July, 1863. That and other questions involving the movements on both sides on July 2d were settled long ago. Meade is dead. Lee is dead. Their testimony is final and will remain final. It is a sad thing to revive old controversies.

But if a book such as Longstreet's "From Manassas to Appomattox" needed a supplement, we have it in Mrs. Longstreet's "Lee and Longstreet at High Tide." *i. e., in the first few chapters* of the book, so titled, Chapter I to Chapter IX. No more was required to establish the fact that Lee and Longstreet were friends, devoted friends. Longstreet was Lee's right arm. There never was a difference of any moment between them. Longstreet was a soldier—a loyal soldier, a disciplined soldier.

The volume before us, from page 93 to page 346, presents Longstreet to us as "In his boyhood days," in "his life-long friendship for Grant," etc., etc., or "Longstreet the Man." Then "Longstreet on the Fields of Mexico," and "Longstreet in Great Battles before and after Gettysburg," and finally, "at Appomattox."

The appendix contains "Tributes from the Press," "Resolutions by Camps and Chapters" and letters from President Roosevelt and Bishop Ireland, Gen. Fred'k Grant and others. These show how universally admired and respected was Longstreet. His detractors must have been dumb-founded.

But, after all, the abuse of Longstreet, after Lee had passed away, was women's work, "stay at homes," angry, rebellious women, who were busy teaching their sons the principles of the "Lost Cause." Teaching them how to restore slavery, and how to uphold the right to secede, as taught even now in one of our Northern universities and in all of the Southern schools; women who later were to refuse to send a wreath of flowers to be laid on the grave of a "Longstreet." This true American, this reconstructionist, all because he was brave enough and wise enough to see the true path to reconstruction and to the rehabilitation of the South.

These women abused Longstreet and some of the women of the South made a few weak men falsify their own records to further the attack upon him. His crime was "He took office under Grant."

They did dishonor themselves, but they could not, and they did not dishonor the great, heroic soldier when they blazoned forth "we will not send flowers to the grave of Longstreet."

When you read this book from "the story of Gettysburg" to the end, you will know much about "Appomattox," "the Army of the Potomac," "the Army of North Virginia," and "the failure for a period of all efforts for reconstruction," and all of this information is there because it is history. It had to be told—this wretched showing up of bitter opposition—and it is well told—modestly told—truthfully told. Bless the woman who did it—who told the story fearlessly.

A. S. WEBB.

Indian Fights and Fighters.*

IN this volume, which is the fourth one of the series, "American Fights and Fighters," the author treats of Indian fights and fighters from the time of General Carrington's Powder River Expedition to and including the annihilation of General Custer's command on the Little Big Horn in 1876. We are glad to note that a second volume is to appear in the fall covering the other Indian fights in the Northwest, and that a third volume dealing with the

* *Indian Fights and Fighters.* By Cyrus Townsend Brady, LL.D. McClure, Phillips & Co., New York. 1904.

Apaches is to follow the second. Any officer that has original information on these subjects would do well to furnish such data to the author so as to enable him to reach a correct conclusion on the questions involved.

The American Army cannot be too grateful to Doctor Brady for putting on record in such convenient and attractive form the narratives which he has spared no pains to make historically correct. He is honest and fair in his criticisms, and, although we do not always agree with him, yet are we glad to see that on mooted questions, such as the cause of the Custer catastrophe, he gives both sides a respectful and an impartial hearing.

Every American officer should read the book. The older ones, to refresh their memories; the younger ones, to see what the soldier's lot was on the frontier before the settlement of the Indian question. And we feel sure that every subaltern, when he has perused its pages, will mentally buckle up his belt one hole tighter, ready to prove himself a worthy successor of the brave men who followed the flag when death was the least of the evils that stared them in the face.

Every American man and woman should read the book, especially those men and women who think American history records no deeds that compare with those of other lands. They will be better patriots for having been made to know about exploits as daring s any that history tells of.

We can assure the author that in thus preserving the record of those stirring times be has done posterity a service. Fortunate indeed was he and the army to have had men like General Carrington revise the chapter on the Fort Phil Kearny catastrophe; General George A. Forsyth the chapter on the Beecher Island fight; General Hughes, Colonel Godfrey, and others the chapters that deal with Custer's last campaign.

The account of the Little Big Horn fight is the most complete unbiassed account that has ever been published, and it is natural and right that this should be so since the author had all the original information from both sides at his disposal. Regretfully the author arrives at the conclusion that Custer disobeyed his orders. He makes out a strong case. But it is our opinion that the now justly celebrated Terry order to Custer was badly worded by him who drew it up. The only *positive* portion of the order is at the very beginning, and reads as follows:

> CAMPAT, MOUTH OF ROSEBUD RIVER, MONTANA TERRITORY.
>
> June 22, 1876.
>
> LIEUTENANT-COLONEL CUSTER,
> *7th Cavalry.*
>
> COLONEL:—The brigadier-general commanding, directs that as soon as your regiment can be made ready for the march, you will proceed up the Rosebud in pursuit of the Indians whose trail was discovered by Major Reno a few days since. * * *

If it wasn't intended that General Custer should go *in pursuit of* these Indians why was this paragraph put in and why was it worded so positively, compared with the rest of the order? Does *in pursuit of* mean to push after, or does it mean merely go in quest of? We think it means vigorous *following* of the Indians whose trail Reno had discovered on the Rosebud some days before, but which

he had not *pursued* far enough to determine in which direction it finally turned. The order continues:

> It is, of course, impossible to give you any definite instructions in regard to this movement, and were it not impossible to do so, the department commander places too much confidence in your zeal, energy and ability to wish to impose upon you precise orders which might hamper your action when nearly in contact with the enemy. * * *

The general *direction* in the first part of the order is till the only order that Custer has thus far received, and the department commander himself declares it is impossible to give *definite instructions* in regard to *this movement.* What movement? The movement "up the Rosebud in pursuit of the Indians whose trail was discovered by Major Reno a few days since." And even if it were possible to give *precise orders* the department commander declares he wouldn't give them to his subordinate as otherwise they might hamper the latter's action *when nearly in contact with the enemy.*

"When nearly in contact with the enemy;" here is a loose phrase. Did Terry consider his command at the mouth of the Rosebud *nearly in contact with the enemy,* or did he mean that he did not wish to give Custer *precise orders* that might hamper him when he should arrive *in his pursuit of the Indians* "nearly in contact with the enemy?" We confess we do not know exactly what was intended.

The order continues:

> He will, however, indicate to you his own views of what your action should be, and he desires that you should conform to them unless you shall see sufficient reasons for departing from them.

We think that this portion, although couched in deferential terms is an order down to "*unless you shall see sufficient reasons for departing therefrom.*" And if Custer saw or thought he saw sufficient reasons for departing therefrom *there was no violation of orders.*

Did he see or did he think he saw sufficient reasons for departing from the views of the department commander? Who can tell? *Only General Custer himself. He is the principal and the only witness in his own behalf, and he cannot defend himself.* Shall we give Custer the benefit of the doubt? He is entitled to it even though his action did cause the failure of the plan of General Terry, and even though it caused the loss of the five troops of his gallant regiment.

Discretion was given him in case he saw sufficient reasons for departing from the views of the department commander.

The order continues:

> He thinks that you should proceed up the Rosebud until you ascertain definitely the direction in which the trail above spoken of leads. Should it be found (as it appears almost certain that it will be found) to turn toward the Little Horn, he thinks that you should still proceed southward, perhaps as far as the headwaters of the Tongue, and then turn toward the Little Horn, feeling constantly, however, to your left so as to preclude the possibility of the escape of the Indians to the south or southeast by passing around your left flank. The column of Colonel Gibbon is now in motion for the mouth of the Big Horn. As soon as it reaches that point it will cross the Yellowstone and move up at least as far as the forks of the Big and Little Horns. Of course its future movements must be controlled by circumstances as they arise, but it is hoped that the Indians, if upon the Little Horn, may be so nearly inclosed by the two columns that their escape will be impossible

General Terry, as future events proved, sized up things exactly —the Rosebud trail did turn toward the Little Horn, the Indians were there; and had they stayed there, and had Custer gone south in accordance with Terry's views, then crossed to the Little Big Horn, swept down that stream, and gotten to the Indian encampment about the same time that Gibbon reached the forks of the Big and Little Horns, the Indians would have been hemmed in between the two commands, and we might to-day be writing about a victory over the Indians in place of giving the dead general the benefit of the doubt.

The order continues:

> The department commander desires that on your way up the Rosebud you should thoroughly examine the upper part of Fullock's Creek, and that you should endeavor to send a scout through to Colonel Gibbon's columns with information of the result of your examination.

The remainder of the order is immaterial to the issue. We judge from what Colonel Godfrey says that Custer carried out the Fullock Creek examination. We know Custer did not send a scout to tell Gibbon of the result of this examination, and from what information we have it looks as though he did not endeavor to do so.

If this celebrated order of June 22, 1876, is perfectly clear, precise and mandatory, why should there be two such strenuous sides to the controversy? There *are* two sides and they are ably conducted; the one finds good and sufficient reasons for what Custer did, the other equally good and sufficient reasons for what he failed to do; but neither side has considered that the principal and the only witness to decide the controversy is beyond recall, and hence they can only tell what others intended should be done, or what they would have done had they been in Custer's boots.

We are glad to see that the author reprints as his closing chapter the sketch entitled, "What they are there for"—the story of the life of General Guy V. Henry. No greater renown as a "fighter" can come to any man than to be considered the equal of Guy V. Henry! He had no superior in coolness, dash, bravery, and resoluteness of purpose, and he had mighty few equals. "That's what we are here for"—when the last moment of hardship, wounds, death, nay torture itself, is with us we cannot do better than repeat the words of one who was indeed the bravest of the brave.

P. E. T.

The Trail of Lewis and Clark.

"THE Trail of Lewis and Clark, 1804–1904," by Olin D. Wheeler, and issued in two volumes, by G. P. Putnam's Sons, is well described by the subtitle as "a story of the great exploration across the continent in 1804-1806; with a description of the old trail, based upon actual travel over it, and of the changes found a century later." The author's plan has been to take the official journal of Lewis and Clark and their associates, and go over the trail with an endeavor to locate it on the ground and determine the particular points of importance to the explorers at the time of their visit. The object of this laborious and painstaking work is not apparent, unless it be to make corrections in the orthography of proper names or other unimportant details. It is difficult to see wherein it adds anything

to the world's knowledge, as large portions of both volumes are made up of quotations from other published works, and the observations and conclusions of the author seem quite natural to the average reader of ordinary intelligence. The work makes it quite clear that the country was pretty wild one hundred years ago, and that the Lewis and Clark Expedition met and surmounted many difficulties, and the author reaches the conclusion that the country has changed a good deal and it is easier to cross the continent now than it was a century ago. The former can be learned from any one of the many books the author so liberally quotes, and the transcontinental railways would be greatly disappointed if the literature which they distribute gratuitously failed to convince the reader of the latter. To the people of the great Northwest, who desire a knowledge of the country in which they live and prefer it second hand, the volumes may be interesting and valuable. The work is profusely illustrated, and the press work and material used are of the best; indeed, all of the mechanical work is encouraging evidence that if "of making many books there is no end" the quality of the workmanship is not diluted by the literary deluge.

H. O. S. H.

The Rebel Scout.*

THIS little volume is of some interest as affording insight into the means whereby the plans and movements of the Union forces were forecast and communicated to the Confederate authorities. It is to be regretted that the recital is rather impaired as to its military value, by some inaccuracies of statement, and is further encumbered by the consideration of matters having no especial bearing upon the experiences of the author. Much of the phraseology is also more reminiscent of the language—too prevalent on either side at the period under consideration—than of the time itself, and is likely to provoke only a tolerant smile from those who were active participants in its stirring scenes. The "Chaplain-Scout" seems at times unable to dissociate the respective functions of his dual vocations in yielding to the temptation to indulge in flights of elegance, out of keeping with his theme.

A. C. R.

Doctor Barnardo.†

THIS descriptive title brings to the attention of the American reader a work little known on this side of the Atlantic. Most persons would be inclined to regard it as the title of some latter day novel or extravagant romance; or if it were considered more serious in its nature, to ask, "Who is Dr. Barnardo?"

Yet in England, and especially in London, his must be a household name, and after one has read this simply told tale of his life work, one can well understand that it should be so.

Briefly, the book tells the story of the truly remarkable work this one man has done, and is doing, for the poor children of London.

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*"*The Rebel Scout.*" Capt. Thomas Nelson Conrad. The National Publishing Co., Washington, 1904.

†*Dr. Barnardo, the Foster-Father of Nobody's Children.* By John H. Batt. Partridge & Co., London, 1904.

Dr. Barnardo, born of Spanish ancestry on his father's side and of English upon his mother's, was a man of natural devotion and energy in all things, and peculiarly a lover of children, for whose good he was later to give his entire life.

In 1865 he was a medical student in the London Hospital, who found pleasure in teaching during his leisure moments such ragged street lads as he could gather in the disused donkey stable which served as schoolroom.

Into this school came one day little Jim Jarvis, "as a battered little bird might enter shoeless, hatless, shirtless, and with only a few rags to cover him from the keen wind and the pitiless night."

"No father, no mother, no home, no friends, no place to go to," was the pitful tale that enlisted the young student's sympathies. He went forth with this little guide, and found amid surroundings of indescribable squalor and wretchedness, groups and colonies of lads sleeping under rotting piers, in the iron gutters of sloping roofs, and wherever a place could be found to shelter, and often with none, under the open sky. On one occasion he found in one such nest seventy-three shivering, starving lads.

Such facts as these with their attendant miseries led to young Barnardo's determination to do something more than teach a handful. He was, though he knew it not, about to decide upon a plan of rescue that was to influence the lives of hundreds of thousands of the outcast poor of London, the "Nobody's Children," whose foster-father he was to become. From this humble beginning, stimulated by his first public contribution from a poor servant of $6\frac{3}{4}$d., has come the vast organization known as "Dr. Barnardo's Homes."

Since the first report in 1867 to the present date, the amount of money contributed of voluntary offerings for his work has been about $500,000 each year—a sum, by the way, though so enormous, equal only to England's weekly liquor bill—and he has adopted and trained already over 52,000 children.

The work, for many years carried on without formal organization, has had more recently for its presidents such men as Lord Cairns, the Duke of Argyle, Lord Polwarth, and Lord Brassey. The donors and helpers at present number 100,000, and a survey of the names reveals the remarkable fact that of these 64,000 gave less than $5, and 23,000, less than $25 each, so widespread is the interest in this charity. To mention a few of the items found in this interesting book, in one year there were 760 infants under five years of age, of whom but one died; the average death rate for an equal number being 41.

In the year 1902 he received 1166 children, either too old or too young to receive Government aid. The "Ever Open Doors" of Bristol and other cities admitted, in 1902, 1530 children, and gave 20,000 lodgings and 60,000 free meals.

The association in addition cares for 1200 blind, deaf, crippled, and otherwise helpless little ones.

In the same year 1050 boys and girls were sent to industrial farms and homes in Canada, making over 15,000 in all who have been sent to Colonial homes. In the same year (1902) over 1400 children were sent to English situations, or to sea from the various training homes. There are always 600 under technical instruction, and 3000 are boarded out in country homes, besides thousands who received temporary shelter and assistance.

The Church of England "Waifs and Strays Society," and the

homes established by Mr. Shaw, are professedly the outcome of Dr. Barnardo's earlier work in the same field.

Then there are the Girls' Village Homes at Barkingside. This consists of a fine church which seats 1200, the day schools and Gymnasium; the schools conforming to the Government Code, as do also the cooking schools. There are also the workrooms and the Home for the Deformed Young People. At Mossford Lodge the secretaries, teachers and other workers live; in all, fifty-six separate homes to accommodate 1000 inmates. There is a School of Needlework and a laundry also in the village. The cottage home idea has proved vastly superior to the old barrack plan of binding together all sorts and conditions and ages.

The religious life is not lost sight of, and church services and instruction are carefully provided for. In view of the fact that among the thousands of contributors there will be much diversity of religious belief, the founder has adopted the rule of inquiring minutely into the parents' religion in every case. Those whose parents are Church of England people are sent to the Church of England Section of Homes—otherwise, they are sent to the Non-conformists' Section, and chaplains and instructors are provided in accordance with the varying conditions thus found.

The great central headquarters of the Dr. Barnardo Homes is in Stepney Causeway, East London, containing a vast assemblage of rooms and offices of every sort. It is the largest block of its kind in East London, and every one of the countless cases presented here is carefully investigated.

In addition to the departments already mentioned, are the Babies' Castle in Kent, Leopold House, Gorey House, Labor House, Children's Fold (for Cripples), the Beehive, the Sick Waif Hospital, the Free Day Schools, the "Edinburgh Castle" with capacity for 3000, the Watt's Naval Training School for 150 boys, and other forms of allied philanthropy that are mentioned in this wonderful story of one man's inspiring work.

The book deals simply and convincingly with its topic, and tells of the struggle in early days with lack of money, of the greater problems and perplexity to-day with an assured income of $500,000, but with a vastly increased responsibility.

In the words of the "Appreciation" by the Duke of Argyle:

"These pages tell a marvelous tale. They show how a man equipped only with a clear brain and a stout heart may do more in his own lifetime in practical benevolence than has been accomplished before in many generations. To give to Dr. Barnado's Homes is to give where men know the interest gained means the assured success of an immense percentage of the lives of the young around us."

E. B. S.

The Book of Toasts.*

THIS collaboration will be found useful, entertaining, amusing, of assistance to the vast number of orators who are suddenly called upon "to say something apropos."

What pleasure the two must have taken in hunting up these toasts—prose and poetry and rhyme—and how bright were they

*"Waes Hael, The Book of Toasts. Editha Lee Chase and Capt. W. E. P. French, United States Army.

when, finding nothing to be gathered from others, they set to work to do the thing themselves. They were equal to it.

Waes Hael! Toasts for all you hold dear—from your country and flag to your best girl.

Captain French need not write another invocation to his critic. He will receive praise enough from his readers, let the critic strive as he will to belittle him. When he says in the Honorarium. "You know, we've stole; we know *you* know," "But we don't care one little cuss." We follow him and sympathize with them both.

"Keep mum, say nothin' (do it, too)," is his advice. We take it—all of us."

Their book is a book of toasts—and it is "for the most part bubbles gathered from the wine of others' wit, with here and there an occasional humbler globule believed to be more or less original."

Ah! The humble globules are sparkling and bright in liquid light and we enjoy them.

Although Captain French says that the prelude, the exordium, is the thing from which all men run but none read; read his prelude and enjoy his "Broaching the Cask."

He gives these toasts "In Bumpers," "In Red Wine" (these are to "The Army," "The Navy" and "War.") "In the Loving-Cup" these include "Friends, woman and man," "From the Flowing Bowl." Well, read *that* and the remainder of the book. Then buy it, and hold it at hand. You may require its assistance. Dinners will be brighter in the near future.

A. S. W

Scientific American Reference Book.*

THIS is an interesting book of about 500 pages, bound in cloth, profusely illustrated, and conveniently arranged in parts and chapters giving much valuable information. Part I treats of Progress of Discovery, Shipping and Yachts, The Navies of the World, Armies of the World, Railroads, Population, Education, Telegraphs, Patents, Manufactures, Federal Government, Post-Office, International Institutions, Mines and Mining. Part II deals with information such as Geometrical Constructions, Machine Elements, Electrical Measurements, etc. Part III, Chemistry and Astronomy. Part IV, Weights and Measures. The chapters on the Navy and Army, and all of Parts II, III and IV are of great value to military men, and especially to the technical troops. Colored illustrations are given of the Steamship, National, and code flags. Under the chapters Army and Navy the following subdivisions may be noted: Construction and Classification of Warships, Navies of the World, Order of Warship Strength, Torpedo Vessels and Submarines, Navies of the World in Detail, List of Ships of the Navy, Torpedo Boats, Submarine Boats, The Interior of a Warship, Submarine Mines, Naval Guns in the Civil War and To-day, Army of the United States, Foreign Armies, Springfield Rifle, and 16-inch Gun.

Under Mechanics very valuable information accompanied by diagrams is given showing the various machines, gears, clutches, engines, etc. Under Part IV is given precise information regarding Weights and Measures, Specific Gravity, Steam Heat, Expansion and Electricity. The book is clear in print, and has fine illustrations.

E. H. SCHULZ,
Capt. of Engineers.

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* *The Scientific American Reference Book.*—N. Y., Munn & Co., 1904.

Our Exchanges.

Military.

Journal United States Artillery.—(Sept.–Oct.) Evolution of the Submarine and How Far the Lake Type Solves the Problem. Submarines. Use of Field-Artillery and Need of Reorganization of Our Field-Artillery. Employment of Artillery Fire. Minimum Distance Between a Battery and Its Mask. Proposed Method of Computing the Danger Space. (Nov.–Dec.)—Seacoast Defense. War Lessons for the Coast Artillery. Japanese Instructions Upon the Employment of Artillery in Battle. The Field-Gun Question in Foreign Armies.

Journal United States Cavalry Association.—(Jan.)—Peace Training of Officers. Shall Subordinate Officers Learn Business of Generals? Five Years a Dragoon. The Organization of a Scout and Sharpshooter Corps. An Umpire at the Army Maneuvers. A Reserve Force. Remounts. A Modification of the Detail System. The Use of the Bicycle in the Army. Suggestion to Young Officers. The Fourth Cavalry with General Lawton in Luzon. Filipino Labor. Surra. Tactical Problems and their Solution.

Journal Associaton Military Surgeons.—(Nov.)—Outline Organization of Dept. Health Isthmian Canal Commission. (Dec.)—On Improved Method of Standardizing the Recruit. U. S. Gen. Hospital, Presidio of San Francisco. 1901–1902. Gunshot Wounds of the Ureter. Some Features of Immediate Treatment and Transport of Wounded in Naval Warfare. (Jan., 1905.)—Observations in the Russo-Japanese War. The Apron Stretcher. Operation for Radical Cure of Varicocele. Organization and Work of Maritime Quarantine Service of Isthmian Canal Commission. (Feb.)—A Medical Reserve Corps for the Army. Roll of Honor 1903–1904. Altitude and Expansion.

Journal Royal United Serv. Inst.—(Oct.)—Education of Imperial Japanese Naval Officers of the Executive Branch. The British Cavalry. The Desirability of the Acquirement of Infantry Officers, Especially of the Higher Ranks, of a More Intelligent Knowledge of the Use of Field-Artillery than they Generally Possess. Speed and Consumption of Steamships. (Nov.)—Types of Traction Engines for Military Purposes. Mechanically Propelled Vehicles for Military Purposes. The South of England as a Theater of War. Future of the Submarine Boat. (Dec.)—Secretary's Notes. Strategic Features of the Operations in Manchuria, as Illustrated by European and American Campaigns. Short Service and the Naval Reserve. Some Notes on the Active Service Kit and Equipment. (Jan., 1905.) Protection of Commerce in War, with Special Reference to the Cape Route. The Sick Horse in Peace and War. The Proposed Reorganization of the Infantry, Militia and Volunteers. Historical Sketch of the Irish Infantry Regiment of Dillon and the Irish Stuart Regiment in the Service of France 1690–1791.

Journal United States Infantry Association.—(Oct.)—A Second West Point. The American Lake Maneuvers of 1904. The Ohio State Maneuvers. The California Maneuvers. The Manassas Maneuvers. The Foundation of an Army. Rifle Firing and the National Rifle Competition.

Journal United Service Institution of India.—(July).—Influence and Application of Sea Power on Expeditions Based on India. (Gold Medal Essay.) The Auxiliary Weapons of Cavalry. The Battle of Kingchau. Mule and Pony Transport in India and its Efficiency. The Employment of Infantry in Defense of Coaling Stations. A Reserve for Indian Cavalry. Cover. Training and Organization of Infantry Scouts. Skirmishing. A National Chinese Renaissance. The Instruction in, and Importance of, Rapid Preliminary Formations in the Training of Infantry. Rapid Photography in War. Infantry and Field-Artillery. (Oct.) The Influence and Application of Sea Power on Expeditions Based on India. Weather and Warfare. Can Cavalry Charge Unbroken Infantry? Amelioration of the Conditions Applying to Native Soldiers Discharged on Account of Medical Unfitness. A System for the Training of Scouts for Hill Warfare. The Value in the Field of a Highly Mobile Force, Specially Organized with a View to Distant Raids, its Training, etc. Communications in the Field.

Proceedings Royal Artillery Institution.—(Oct.)—Future Training, Organization and Tactical Employment of Q. F. Field-Artillery. The Question of Competitive Practice in Horse and Field-Artillery. Battle Tactics of a Q. F. Artillery Brigade and the Brigade Staff. Proposed Reorganization of the R. H. A. by Brigades. Plea for the Disappearing Gun. Proposed System of Fighting Charts in Lieu of "Square" System. (Nov.)—The Evolution of a Field-Gun. The Organization for Quick Firing Artillery. The Evolution of Artillery. Signally for Horse and Field-Artillery. Signalling as Applied to Field-Artillery. (Dec.)—Field Astronomy. Organization of Field-Artillery. Plea for a Field-Artillery Training School. The Pattern Telegraph. Artillery Practice Camps. (Jan.)—The Evolution of Artillery. The R. G. A. Chain of Command. The Campaign of Corunna. Communication Between Infantry and Artillery in Attack. Tactical Rôle of the Field Howitzer.

Revue de l' Armeé Belge.—(July).—Some Consideration on the Rôle of Bicycle Companies. The Field-Artillery Question in Austria. The War in the Far East. (Sept.)—The New Repeating Rifle Mauser M. 1904. Some Studies Relating to Infantry. Notes Concerning the Russo-Japanese War.

Revue Militaire des Armèes Etrangéres.—(Sept.)—Question of Field-Guns in Foreign Countries. Organization of the Bulgarian Army. War Budget of the German Empire for 1904. (Oct.)—Military Academy of Berlin. War Budget of the German Empire. Remount System in Switzerland. (Nov.)—The Imperial German Maneuvers of 1904. New Maneuvering Regulations of the English Cavalry. Remount System in Switzerland. (Dec.)—Annual German Maneuvers of 1904. New Regulations for Maneuvers of the English Cavalry. (Jan.)—The Question of Field Howitzers in Foreign Armies. Imperial German Maneuvers in 1904.

United Service, New York.—(Oct.)—West Point.—Her Sons. A Tour in Southern Manchuria in Sept., 1901. Campaign and Battle of Shiloh. Strategy and Tactics of the Russo-Japanese War. (Dec.)—Administration of Justice in the Navy. The Mother of Navies. The Star Spangled Banner. The Battle of Sedan, Beyond and Back Again.

United Service Magazine, London.—(Oct.)—Russia and Japan in the Far East. Lhassa and its Armed Rabble. The Proposed Abolition of the Militia. Some Remarks on Recent Changes. Indian Volunteer. Military Training. The Squadron System: Specialism in the Royal Artillery. (Nov.)—Thirty Years of Naval Progress. Some Lessons from the Russo-Japanese War. A National Ambulance Service. Voluntary Enlistment and an Effective Militia. Evolution of the Short Service System. Metaphysical Maneuvers of a Phantom Army. Evolution of Modern Strategy (see also Dec., 1904). The Heavy Artillery of a Field Army at River Crossings. Squadron System Artillery in the Far East. (Dec.)—Of the War in the East. Great Britain's Serious Position. The Genesis of the Japanese Fleet. Our Naval Expenditure. How to Reduce It. Armored Field-Artillery. The Education of the Cavalry Officer. Military Training. Peace Maneuvers. A Retrospect and Prospect of War. (Jan., 1905). The Past Naval Year. A General Staff for the Navy. Our Coast Defences; by Whom Should They be Manned. The Military Situation. The Reorganization of the Indian Army. An Asiatic Conqueror. Minor Expeditions of the British Army from 1803 to 1815. Declarations of War. Military Education.

Naval.

Proceedings of the U. S. Naval Institute.—(Sept.)—A Handicap on United States Battleships. Training Ranges and Long Range Firing. A Study of Attacks upon Fortified Harbors. Colliers and Coaling Stations. Fire Control. War and its Prevention. (Dec., 1904). The Korea's Ward-room Mess. A Study of Attacks upon Fortified Harbors. Operations of the Navy and Marine Corps in the Philippine Archipelago. The Significance of Overcrowding. Desertion and its Prevention. The Battle of Ciudad Bolivar and the End of the Revolution in Venezuela. Rifling. Methods of Estimating the Coal Endurance of a Naval Vessel.

Miscellaneous.

Annales de la Sociedad Cientifica Argentina: regular issues, to date.
Armee et Marine: regular issues, to date.
Boletin del Centro Naval: regular issues, to date.
Bulletin American Geographical Society: regular issues, to date.
Current Literature: regular issues, to date.
Journal of the Western Society of Engineers: regular issues, to date.
La Belgique Militaire: regular issues, to date.
La Engeneira: regular issues, to date.
La Revue Technique: regular issues, to date.
Political Science Quarterty: regular issues, to date.
Proceedings of the American Society of Civil Engineers: to date.
Review of Reviews: regular issues, to date.
Revue du Cercle Militaire: regular issues, to date.
Revista di Artiglieria e Genio: regular issues, to date.
Revista Maritima: regular issues, to date.
The Scientific American: regular issues, to date.
The Popular Science Monthly: regular issues, to date.
The Seventh Regiment Gazette: regular issues, to date.
The Medical Record: regular issues, to date.
The Century Magazine: regular issues, to date.
The Army and Navy Journal: regular issues, to date.
United Service Gazette: regular issues, to date.

For Library and Review.

Report of Maj. R. K. Evans, Asst. Adjt.-Gen., U. S. A. Chief Umpire, Maneuver Division, American Lake, Washington, 1904. Mann & Beach, Portland, Ore., 1904.

Historical Sketch of the Corps of Engineers. By Brig.-Gen. A. A. Humphreys, Chief of Engineers (1876). History of the Engineer Battalion. By First Lieut. Thomas Turtle, Corps of Engs.

Company "A" Corps of Engineers in the Mexican War. By Capt. G. W. Smith, Corps of Engineers (1896).

Biography of the late Bat. Maj.-Gen. Joseph G. Totten, Chief Engineer, U. S. Army. By Bat. Maj.-Gen. J. G. Barnard, Col. of Engs., 1866. Washington Barracks, D. C., 1904.

Water Supply of Washington, D. C. By Col. Alexander M. Miller, Corps of Engineers. Washington Barracks, D. C., 1904.

Report of the Joint Encampment for Field Instructions of United States Troops and the Organized Militia of California. August 13 to 27, 1904. Maj.-Gen. Arthur MacArthur, Commanding.

Report of Maj.-Gen. Arthur MacArthur on the Encampment for Field Instruction and Maneuvers in the Pacific Division, 1904.

Report of the Librarian of Congress for the year ending June 30, 1904. (Washington) Government Printing Office, 1904.

Report of the Superintendent U. S. Naval Observatory, for the year ending June 30, 1904. (Washington) Government Printing Office.

Arbitration and The Hague Court. By John W. Foster, Pres. National Arbitration Conference. (Boston and New York) Houghton, Mifflin & Co., 1904.

Heath's Memoirs of the American War. Reprinted from the original edition of 1798. (New York) A. Wessels Company, 1904.

The Napoleon Myth. By Henry Ridgely Evans. (Chicago) The Open Court Pub. Company, 1905.

Indian Fights and Fighters. By Cyrus Townsend Brady, LL.D. (New York) McClure, Phillips & Co., 1904.

Military Government and Martial Law. By William E. Birkhimer, LL.B., Maj. Gen. Staff, U. S. A. Second Edition revised. (Kansas City) Franklin-Hudson-Kimberly Pub. Co., 1904.

Syllabus of Davis's International Law. By C. A. Soane, Third U. S. Cavalry. (Kansas City, Mo.) Franklin-Hudson-Kimberly Pub. Company, 1904.

Estimating Distance Tables. By Capt. Edwin Bell, Eighth U. S. Infantry. (Kansas City, Mo.) Franklin-Hudson-Kimberly Pub. Co., 1904.

The Rebel Scout. By Capt. Thomas Nelson Conrad, of the Army of Northern Virginia C. S. O. (Washington City) The National Pub. Co., 1904.

Military Studies. The International Military Series, No. 8. By Frederic Louis Hinderkoper. (Kansas City) Franklin-Hudson-Kimberly Pub. Co., 1904.

The Campaign with Kuropatkin. By Douglas Story. (Philadelphia) J. B. Lippincott Co., 1905.

Adjutants' Manual. By Courtland Nixon, Captain Second Infantry, U. S. A. (New York) John Wiley & Sons, 1905.

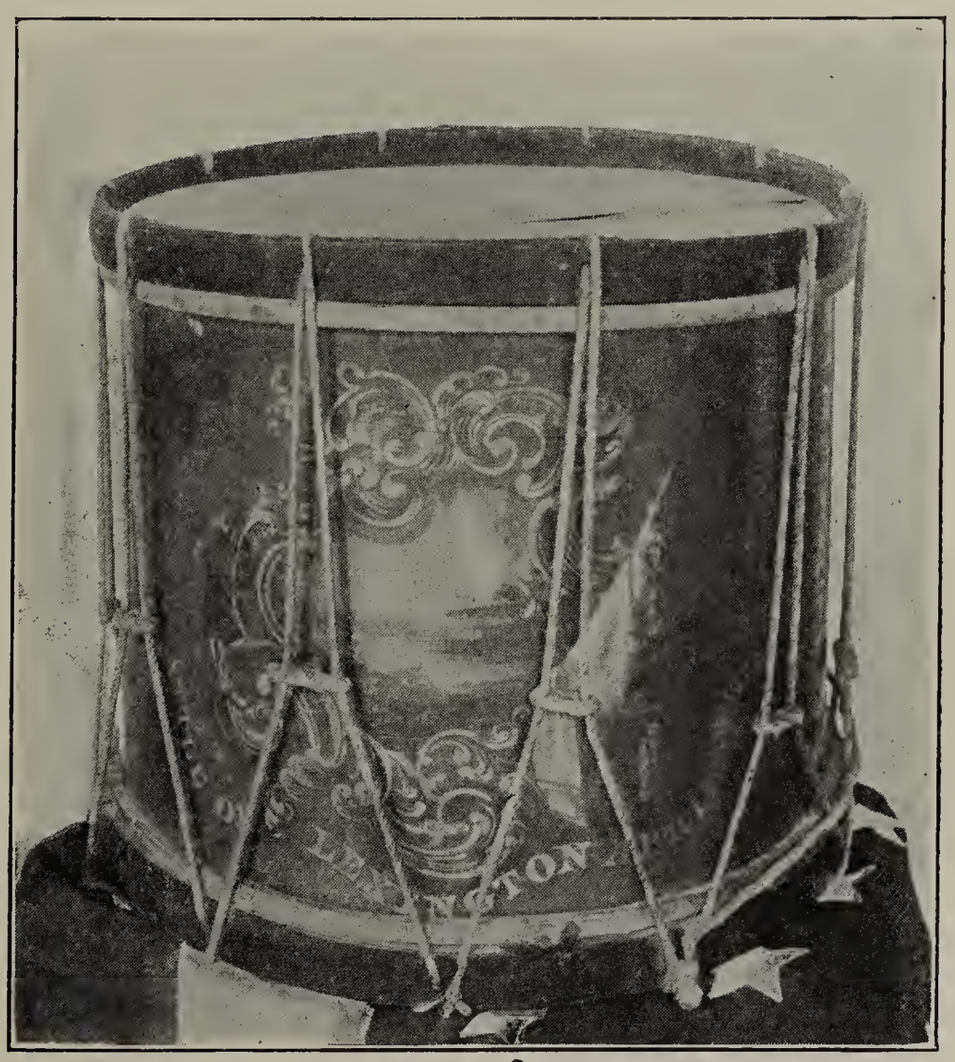
New Forces in Old China. By Arthur Judson Brown. (New York) Fleming H. Revell Co., 1905.

The Russo-Japanese War. By Thomas Cowan. (New York) Longmans, Green & Co., 1904.

With Kuroki in Manchuria. By Frederick Palmer. (New York) C. Scribner's Sons, 1904.

The Illini; A Story of the Prairies. By Clark E. Carr. Third Edition. (Chicago) A. C. McClurg & Co., 1904.

Trials and Triumphs. The Record of the Fifty-fifth Ohio Volunteer Infantry. By Captain Hartwell Osborn and others. (Chicago) A. C. McClurg & Co., 1904.



ANNUAL REPORT, 1904.

GENTLEMEN: The Executive Council has the honor to present its report for the past year as follows:

No event affecting the Institution of sufficient importance to call for extended remark has occurred during the year. A general meeting for which invitations were extended to a considerable number of persons not members of the Institution, was held on the 19th day of November, 1904, at the armory of the Seventh Regiment of New York, the use of which was given for the occasion by that regiment, at which meeting an able and interesting essay was read by Col. Arthur L. Wagner, of the General Staff of the Army, upon the subject of the recent "Combined Maneuvers of the Regular Army and the Organized Militia." Much interest was excited by the announcement of the meeting and of the subject for discussion. The attendance was good, somewhat over a thousand persons, in quite large part members of the National Guard.

There has been an addition to membership during the year, and the finances are in a satisfactory state.

The good relation of the Institution to the services is well evidenced by editorial remarks in the issue of *The Cavalry Journal* for this month, quoted in part as follows:

"In glancing through this index (referring to the index recently issued by the Institution), one who has not kept pace with the progress of the Military Service Institution is struck with the array of professional subjects that have been discussed in the pages of its journal, and one has but to look over the index of authors to be convinced that most of the subjects have been ably treated, for in that list we find the names of most of the officers of our service—not all of them by any means—that have distinguished themselves as writers, or otherwise, since the Civil War.

"And in looking over this index one cannot but be reminded—if one needs to be reminded—of the vast good the Military Service Institution has done for our service."

The Institution is so firmly established and its methods of work are so well adapted to its purposes that a useful and prosperous future seems assured.

T. H. RUGER,
Major-General, U. S. A., President.

TO THE MEMBERS AND ASSOCIATE MEMBERS
MILITARY SERVICE INSTITUTION.

Journal of the Military Service Institution 1878 — 1905

Governor's Island N. Y. H.

THE JOURNAL

MAY-JUNE, 1905



OME of the papers approved for early publication in JOURNAL for the year 1905.

I. "EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN; WHAT PRACTICAL USE HAS BEEN MADE OF THEM AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY."—(Silver Medal). By Captain Celwyn E. Hampton, 21st Infantry.

II. "MILITARY HYGIENE: HOW BEST TO ENFORCE ITS STUDY IN OUR MILITARY AND NAVAL SCHOOLS AND PROMOTE ITS INTELLIGENT PRACTICE IN OUR ARMY."—(Hon. Mention, Seaman Prize). By Major F. A. Winter, M.D., U. S. A.

III. "THE SURPRISE OF THE TABOR BRIDGE AT VIENNA. BY PRINCE MURAT AND MARSHAL LANNES, NOV. 13, 1805." II.—From the Original Documents in the Ministere de la Guerre in Paris and the Kriegs-Archivs in Vienna, by Frederic Louis Huidekoper.

IV. "SIEGE AND FIELD OPERATIONS IN THE FAR EAST."—By Colonel William R. Livermore, Corps of Engineers.

V. "ACCOUNTABILITY FOR PUBLIC FUNDS AND PROPERTY."—By Colonel H. O. S. Heistand, Asst. Adjt.-Gen., U. S. A.

VI. "MILITARY METHODS AT TELLURIDE."—By Lieut. Geo. de G. Catlin, 2d Infantry.

VII. "THE HALLECK MEMOIRS: SOME UNWRITTEN HISTORY."—Selected and edited by Gen. James Grant Wilson

VIII. "A MEET IN THE PHILIPPINES: RATIONAL PLAN OF ATHLETIC TRAINING."—By Brig. Gen. W. H. Carter, U. S. A.

IX. "HOW MANY MEN ARE NEEDED IN A COAST ARTILLERY ORGANIZATION IN PEACE TO INSURE A HIGH DEGREE OF EFFICIENCY IN WAR."—By "Defense."

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

The Military Service Institution.

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Term ending 1909.

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Major A. MURRAY, Artillery Corps.
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Term ending 1905.

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Captain F. W. COE, Artillery Corps.
Lieut. Colonel E. E. DRAVO, Subsistence Dept.
Brig. Gen. A. L. MILLS, United States Army.
Colonel F. A. SMITH, Eighth Infantry.
Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Library Committee.

(Vacancy.)

Publication Committee.

Gen. BARRIGER, Gen. RODENBOUGH, Col. GREER and Col. SMITH.

MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.

Gold Medal—1905.

First Prize—Gold Medal, $100 and Life Membership.
Second Prize—Silver Medal, Honorable Mention and $50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with $100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and $50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January* 1, 1906. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize;* and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed ten thousand words, or twenty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1905, is

THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT: THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED.

III.—The names of the gentlemen selected for the Board of 1905 are:
General ROBERT S. OLIVER, Ass't Secretary of War.
Brigadier General JOHN W. CLOUS, U. S. Army.
Colonel JAMES REGAN, 9th U. S. Infantry.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.



The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, the subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for the year 1905 is:

HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED?

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be transmitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1905. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The names of the gentlemen selected for the Board of 1905 are:

Major General JOHN C. BATES, U. S. Army.
Brigadier General CAMILLO C. C. CARR, U. S. Army.
Brigadier General FREDERICK D. GRANT, U. S. Army.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: $50, and Certificate of Award; and $25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, excepting that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive, or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending March 1 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.



Fry (General) Prize.



The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

Buford (Cavalry) Prize.



The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

Hunt (Artillery) Prize.



The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.



The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

Fifty Dollars

"for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1905 are:

Major General J. Ford Kent, U. S. Army.

Brigadier General John F. Weston, U. S. Army.

Brigadier General George H. Harries, D. C. Militia.

T. F. RODENBOUGH,
Secretary M. S. I.

Governor's Island, N. Y.,
January 1, 1905.

Publisher's Department.

MEDIUM SIZE FAST PASSENGER STEAMERS.

Generally Good Dividend Payers.

The new steamer now being built for quick passenger service on northern Lake Michigan represents a type of boat well worth the careful consideration by any who expect to invest in a business of that character, and we refer in particular to the *best* of modern steam vessels ranging from about 75 to 160 feet in length. The one referred to has a finely modeled steel hull, 142 feet long by 28 feet beam, and will draw with ordinary load 11 feet. Her triple expansion machinery embodies all the good, practical features that long experience demonstrates is the best, when *actual worth* rather than "first-cost" is the prime consideration, it being designed and built by Marine Iron Works, Station A, Chicago. The engine cylinder diameters will be 14 and 22 and 36 inches by 24-inch stroke, fitted with steam reverse.

These modern, quick-moving, medium-size, dependable vessels on eight to twelve-hour daily runs are far better "producers" than generally understood, and are gradually supplanting the old and slower moving combination freight, tug and passenger boats. Their first cost is necessarily greater, but generally the net results are in their favor before the close of even one season's business, as is usually the case with all first-class work, and more especially so when marine machinery enters into the calculation.

The same company (Marine Iron Works) have also been awarded the contract for building the fore and aft compound condensing machinery for new Government Survey boat for use on Gulf of Mexico coast.

* * *

HONORED BY MILLIONS.

The total admissions to the World's Fair were 19,000,000; of this number approximately 3,000,000 were officers, exhibitors, concessionaires, and employees; 6,000,000 were residents of St. Louis and 10,000,000 non-residents. Estimating that each non-resident visited the Fair at least four times, it would appear that 2,500,000 people came to St. Louis in the seven months and during this same period more than 1,250,000 people passed through the Anheuser-Busch plant. Never before has an establishment been honored by so many visitors, and it is safe to say that at least one-half of the people who came to St. Louis availed themselves of the opportunity to inspect the greatest plant of its kind in the world.

1904 was the banner year in the history of the Anheuser-Busch Brewing Ass'n, its sales being 1,365,711 barrels of beer, showing an increase of 163,949 barrels. The latter as an annual output would exceed that of the majority of the larger breweries of this country. This phenomenal increase is the more remarkable, because the past year, owing to the long winter and

abnormally cool summer, was a decidedly off year for the beer business. The total gain of the beer output for the United States for 1904 was about 900,000 barrels, thus proving Anheuser-Busch's increase of 163,949 barrels to be about 20 per cent. of that of all breweries combined. Such an exceptionally good showing can only be attributed to the excellence of their products and the courteous treatment of their patrons.

* * *

INTERESTING STATISTICS.

The following table of importations of the principal brands of champagne that arrived at the port of New York during the year 1904, should be of considerable interest to lovers of the sparkling wine:

MOET & CHANDON	116,549 cases
G. H. Mumm & Co.	85,228 "
Pommery & Greno	24,143 "
Ruinart, pere & fils	15,822 "
Vve. Clicquot	13,076 "
Piper-Heidsieck	9,136 "
Louis Roederer	6,990 "
Pol Roger	6,603 "
Dry Monopole	2,932 "

Tabulated according to Custom House Statistics by Bonfort's Wine and Spirit Circular, January 10, 1905.—Adv.

JOURNAL
OF
THE MILITARY SERVICE INSTITUTION
OF THE
UNITED STATES.

"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

Vol. XXXVI. MAY-JUNE, 1905. No. CXXXV.

THE ARMY AS A FACTOR IN THE UPBUILDING OF SOCIETY.

BY CAPTAIN M. B. STEWART, EIGHTH U. S. INFANTRY.

TO many the superscription of this article may come in the nature of a surprise, for while the people of the United States are not inappreciative of their fighting forces, they have not as yet been educated up to the point of regarding them in the light of agencies of social improvement. When we consider that the soldier's sphere of action is ordinarily so remote as to preclude anything like intimate contact or association with the great mass of the people, it is not surprising that such should be the case.

In time of peace the work of the army is conducted in a manner so unobtrusive as to escape comment except on those unfortunate occasions when its internal discipline brings some offender temporarily to the notice of the press. It is for this reason, primarily, that the popular conception of the army is less flattering than the work of that body would seem to merit. Unfortunately, too, the army has for years labored under the burden of a popular theory which relegates to it the function of a dump-ground for recalcitrants and derelicts, a theory which owes its origin, if such there be, to the days of other, and happily past, epochs.

With the rest of the world the army has advanced, and in its advance has lost none of the worthy traditions inherited from a sturdier if less erudite generation, and therein it possesses an advantage over contemporary society, for, con-

trolled by the same civil restrictions, where society is but indifferently governed by a loosely constructed fabric of convention, the moral atmosphere of the army possesses the additional safeguard of a code whose transgression means disgrace and expulsion. Succinctly the atmosphere of the army of to-day is one of cleanly lives, honorable dealings and enthusiastic devotion to country, an atmosphere enforced by a system of rigid discipline whose object is the correction and encouragement rather than the punishment of the individual.

The effect of such an atmosphere on the young man who enters the service can but be beneficial and it is in this influence which it exercises over the characters, often during a formative period, of those who from time to time form a part of the service, that the army plays an important part in the upbuilding of society. As a vocation, it offers none of the brilliant opportunities to be encountered in civil life, a condition which limits the sphere of its influence to a class deprived of many advantages. That such is the case does not in any way detract from the meritoriousness of its achievement.

For the civilian, improvement of any description is to be obtained only by an extra expenditure of time and energy over that necessary to his maintenance, while in the army, whatever of improvement may accrue to the individual, comes to him as a part of his routine labor for which he receives compensation.

In order to properly evaluate the benefit of army influence over society in general it is first necessary to establish some standard whereby to measure the worth of man as a citizen, and to identify the results of army training with these standard characteristics.

Every race, indeed almost every age, of man has established for itself some such standard. These standards have of necessity been functions of the philosophy, enlightenment and necessities of the particular ages to which they have pertained and, obviously, have been ever-variable and ever-varying. A study of the various standards of well-defined ages, however, reveals the possession of much in common, and it is from these more enduring characteristics that we should form a standard for the evaluation of the desirable citizen.

In no age of the world has physical perfection failed of

appreciation. Greece was unstinting in its devotion to its culture and rewarded its successful attainment with extravagant honors. With Sparta it assumed almost the proportions of a religion. Rome delighted in the prowess of its gladiators, while feats performed in the tournament typified the ideal sport of the early European courts. Bodily vigor and strength wrested this country from savages, defended it in rebellion and against invasion, and has made it whatever it may stand for to-day.

With the dawn of civilization came its necessary concomitant—Law, and obedience to the law has been recognized as essential to domestic and foreign relations from their inception.

Love of country, to the credit of mankind be it said, is an almost universal characteristic of every people of every degree, and the pride with which each nation honors its defenders is sufficient to fix the place of patriotism in any standard of character.

These three characteristics, physical perfection, obedience to the law and patriotism, may be said to have received the sanction of ages as fundamental characteristics of the valuable citizen.

It is doubtful if these attributes, sterling as they are, would to-day be accepted as constituting the full measure of good citizenship, but, as furnishing the fundamentals for all true development, they must be recognized as virtues to be prized in the citizen of any day.

If we admit the truth of this assumption, the influence of the army becomes apparent when we consider the transformation which the raw material undergoes in the making of a soldier.

From the moment that the recruit enters the service the responsibility for his welfare is shifted from his shoulders to those of officers trained in the art of subsisting and maintaining troops. By them he is properly fed, clothed, housed and attended in sickness, and, in return, he has but to lend his will and energy to his instruction. In this he becomes the immediate object of attention of at least one officer and a dozen non-commissioned officers, all of whom add to their natural professional zeal a pardonable pride in the organization to which they belong. His instruction is given all the care bestowed by the artisan on a delicate part of a delicate mechanism for on the perfection attained by the individual de-

pends the degree of perfection which may be reached by the company and thereon depends the professional reputation of its officers.

He is taught that cleanliness is essential to health and decency, and by constant cleanly association with others he comes to regard it not as an occasional luxury but as a necessary adjunct of his comfort. He is given substantial and becoming garments and is supervised in their care and preservation until such supervision becomes unnecessary. By instruction and example he is made to understand that nattiness and neatness in personal appearance are essential elements of respectability.

By judicious restraint he is taught the distinction between order as inspired by fear of the law, and order induced by pride and love of moderation. His life is ordered and arranged for him after the manner best calculated to benefit him and at the same time best subserve the interests of the military service. To this end he is subjected only to that restraint necessary to the observance of discipline. In the end he becomes habituated to cleanliness, order and moderation to the degree that the absence of any one of them is a source of actual discomfort to him. He grows to recognize that discipline is aimed as much at the misbehavior of others, whereby he may be discomforted, as at his own shortcomings. He learns to respect it as a protection rather than a menace, and in this knowledge he becomes possessed of the fundamental principles underlying all law.

In the meantime his physical welfare is the subject of careful consideration on the part of those responsible for his training. He is accorded much the same inspection a builder gives the material he puts into a structure, and, his defects once detected, he is given judicious exercise to remove or alleviate them. His food, plain and wholesome, is prepared in the manner best calculated to nourish him and his habits are so regulated as to build up his physique. Almost imperceptibly and perhaps entirely unconsciously, he is physically remodeled and developed. His rounded shoulders are straightened and broadened; his narrow, flattened chest is deepened and widened; his legs and arms are trained to respond with the minimum effort and maximum grace to every impulse of his will; his careless carriage and unnatural gait have been replaced by the healthy upright posture and

easy swinging stride that distinguishes the soldier the world over, and it may be that what he has regarded as a mere recreation has been the saving grace to his dormant tissue. Wholesome living, abundant exercise and orderly habits have imparted a healthy color to his skin and clearness to his eyes. The nature of his occupation has inculcated in him a spirit of confidence and self-reliance which make him a more forceful member of any profession he may choose to enter.

Morally he is not neglected, though in this respect his education is gained in great part by absorption from his environment. He is a member of an organized disciplined family, the comfort and security of which is dependent upon the honesty and integrity of the individuals composing it. The community character of the soldier's life furnishes abundant opportunity for petty dishonesty and it is the knowledge of this insecurity which leads soldiers to guard so jealously their common interests. By localization the insidious character of crime is more indelibly impressed upon them and thereby rendered more abhorrent.

In his daily duty the soldier learns that truthfulness is necessary to its proper performance. He comes to realize that the slightest deviation from the truth on the part of others may lead him into error and consequent punishment or may endanger his own and his comrades' safety. As a matter of self-protection he demands undeviating truth from others and the habit of truth-telling insinuates itself upon him until it becomes not a matter of expediency but one of natural inclination.

As a school wherein may be fostered and developed every sentiment of patriotism, nothing can surpass the army with its traditions antedating even the Republic itself. In his daily life the soldier treads the same paths over which countless heroes have passed before him. His daily associations are constant reminders of the achievements of those whose names live in the history of a grateful land. The uniform he wears has become a symbol of courageous devotion to the principles of the country he serves. In a measure he feels that he is an active factor in the making of history and in that history he takes the personal pride of the artisan in his work.

Nor does he abandon the habits formed or sentiments developed in the service when he separates from it. In a modified form, adapted to the circumstances of his new life and

surrounding, the army habits and training cling inseparately to him. It may be that he will never care to re-enter the service, but there will never come a time when the fluttering of his country's flag or the sight of his discarded uniform will not awaken in his mind cherished recollections of his military service or stir in his breast emotions which better fit him for the life of a loyal citizen.

Eventually the ex-soldier becomes the head of a family and the influence of his army training is extended to the domestic circle. His children are reared in an atmosphere of cleanliness, order and discipline. In the child is reflected whatever of patriotic sentiments the father may cherish and in the unconscious hero-worship of the child these sentiments are exaggerated and intensified.

The number of men so trained and returned to civil life, while not large, is nearly unvarying and in time is sufficient to constitute a considerable factor in society. In round numbers a third of the army annually leaves the ranks to engage anew in civil pursuits. In the course of ten years an army of nearly two hundred thousand men is distributed throughout the land to enter the life of thousands of communities. If we are to believe that a majority of them assume the responsibilities of the citizen in all that it implies of domestic relations and public-spirited effort, the influence of the army is seen to cover a large and comprehensive area.

Of the class who do not so return to civil life, but who remain in the army to make a life work of it, the army and the country have no reason to be other than proud. In the nature of things there must be in every generation a proportion of misfits which through misfortune or lack of advantages finds itself left behind in the race of life. Such a fate does not necessarily imply a lack of worth or ambition, but, too often, simply of opportunity. Many such find places in the army and in the profession of arms find a congenial calling which, while not brilliant or remunerative, is honest and honorable. In it they are respectable members of society, leading honorable independent lives and standing ready in emergency to give value received to the country they serve.

Among those returned to civil life from the army is a class to which disparaging reference is too often made. I refer to those unfortunates who have dishonorably terminated their connection with the service. The published statistics of this

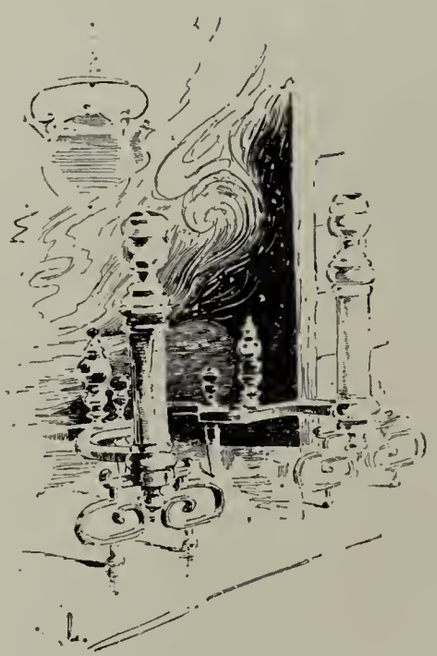
class can hardly be accepted as a fair criterion of the amount of crime in the army, for the reason that many such discharges are the results of purely military offenses and are without criminal significance. In the majority of cases the punishment is the result of an inability to adjust the previously conceived ideas of personal freedom to the moderate restraint of army discipline. Many of this class realize when too late the error into which they have fallen and would gladly re-enter the service if permitted to do so. In every military prison there are scores of young men who would undoubtedly serve honorably and with benefit to the army did the military code permit of their re-enlistment. The majority of those returning thus to civil life bear no resentment toward the military service and realize fully that they have only suffered the penalty of their own indiscretions.

It is with a degree of trepidation that I approach what seems to me to be a logical deduction. The advocacy of anything savoring of compulsory military service is a challenge to American sentiment and tradition. Commercial enterprise is quick to brook interference with its progress, the more especially, when such interference is not productive of at least prospective financial benefit. The average American is intolerant of anything which restrains him in the full exercise of his own free will. Such a sentiment combined with lack of education and its accompanying disadvantages can only result in the spirit of lawlessness with which the public is already too familiar. The protection of life and property in the large cities has developed into a situation with which the police facilities seem unable to cope. The problem might better be solved by preventative than by punitive measures. If a term of compulsory military service of one, two or even three years would result in the physical and moral improvement of the individual; if it would inspire him with a more profound respect for and obedience to the law; then commercial interest might well afford the temporary inconvenience of such a separation in view of the advantages to be derived from the service of a superior class of trained and disciplined members of society.

If we are to believe that sturdy physiques and sound personal principles are valuable assets in the manhood of a nation, the conclusion seems to point persistently to something akin, at least, to the military training of youth.

The army is an expensive institution whose periods of active

service are, happily, separated by longer periods of peace. Its maintenance during such periods of military inactivity is a question of political expediency which does not permit of argument. Its function during such periods cannot justly be characterized as one of passivity, for it is ever busied with careful, conscientious preparation wherein it can never hope to attain a permanent degree of perfection, but must content itself with the molding of raw material into more perfect manhood and distributing the results amid the ranks of society.



Silver Medal Prize.

THE EXPERIENCES OF OUR ARMY SINCE THE OUTBREAK OF THE WAR WITH SPAIN: WHAT PRACTICAL USE HAS BEEN MADE OF THEM, AND HOW MAY THEY BE FURTHER UTILIZED TO IMPROVE ITS FIGHTING EFFICIENCY.

By Captain CELWYN E. HAMPTON, Twenty-first Infantry, United States Army.

IN order to intelligibly discuss the conclusions and the benefits to the army that are to be derived from our experiences during the Spanish-American War, it appears to me well to revert, first, to the conditions that developed at its inception and during its progress merely as matters of fact; second, to enumerate the primary and most important things learned from these developments either by the army itself or by the people at large, together with some results already achieved; third, to state what will, apparently, be the results, in the near future, from the awakening or reawakening to realization of our military weakness, judging from past experience and present tendencies; fourth, to point out some of the lessons yet to be learned by or, at least, to be solved by the army for the benefit of our service and the people, proposing, briefly, some solutions for these problems.

To the army it was no discovery that at the outbreak of the war we had not sufficient force of either officers or enlisted men with which to prosecute it, or that our organization was faulty and unfit to withstand the strains of active service. Neither was it any secret, for the army had been, for years, proclaiming its belief, producing arguments and proofs to show that these weaknesses existed, and insisting, in the modest way in which our military arm must always work, that its numbers were totally inadequate and its organization obsolete, rendering difficult the carrying on of its work, even considered only as that of a highly trained nucleus in peace

times. In spite of some boasting, in the early days, that one American soldier was equal to ten Spanish and that 15,000 troops were an abundant force for the quick reduction of Havana, it may be said that the first act of hostilities served to show the country a portion of the fallacy to which it had clung by failing to heed the warnings of its soldiers in the years past. Later, the threatened descent of a Spanish force upon our Eastern seaboard, ludicrous as it now appears, in the light of subsequent events, produced a condition of panic fear in a section of the country where I had heard men of intelligence and public standing declare, two years before, that the American people, rising *en masse*, armed only with scythes, could beat back any foreign invasion that might ever be made. Under the driving force of necessity, therefore, the belated increase and reorganization of the army began. It is needless to use space here to describe the condition that resulted, further than to say what the army saw then, that attempted reorganization after war begins produces a state that would be better described as disorganization.

Depending, as always, upon volunteer levies for the main strength of the large army required, the organization of these forces began in the greatest possible haste, and developed all the well-known weaknesses inseparable from such a system. Men absolutely untrained and inexperienced in matters relating to the profession of arms were commanded, mainly, by officers as untrained and inexperienced as themselves. It was recognized that a leavening of regular officers should be added to this force, but so keen is the civilian to preserve his right to exercise military command upon opportunity that Congress was called upon to pass, and did pass a law limiting the number of Regular officers that could be used with Volunteer troops to two per regiment. Even this small number could not obtain places, so great was the objection made to their use and, consequently, the leavening process was almost inappreciable. Furthermore, the addition of these Regular officers was made in so irregular a manner, owing to a total lack of all previous plans for their advancement, that two anomalous and weakening conditions at once developed. First, nearly all fell under the command of civilian Volunteer officers. Second, these promotions and appointments, being made by favor of one kind or another, young subalterns of perhaps only a few months' service were frequently jumped into comparatively

high command rank, while officers of long service, experience and really tried ability suddenly found themselves junior in rank to and actually serving under youngsters who had barely begun their novitiate in the high calling of arms. When the natural disappointment at the passing of what might be truthfully considered "their lawful occasions" had somewhat subsided, officers of the Regular Army began to find that it was, perhaps, well for their organizations that no more were taken for this purpose, because the number with troops became so depleted, from various causes, that, considering the influx of recruits to the ranks and the reorganization muddles, the efficiency of the army began to be seriously impaired.

The National Guard had formerly looked upon itself as in the forefront of forces prepared for filling honorable positions in war time, but when need came, they were not found to be fitted and, after many furious controversies, were entirely disregarded.

The Regular Army was looked upon as a force which, though small, was in the highest state of training and efficiency. So far as concerned the interior economy of the army under its peace organization, this was true enough. But to meet its expanded state and a supposed readiness for war, it was not true. Mainly the fault for its unpreparedness must be laid at the door of Congress—that is, of the people themselves. The latter are ever prone to disregard the advice of purely military men and to prefer ideas of easy faith in the future, while Congress cared more for a record of economy, which was popular where military matters were concerned, than for the careful provision demanded by wise forethought. Guns and ammunition for the artillery had not been provided, either of sufficient quantity or of modern character. We possessed a good small-arm rifle, but not in anything like the numbers required to equip the force we proposed to raise. The bulk of our army, therefore, prepared to take the field armed with an obsolete and antiquated weapon, using ammunition totally unfitted for modern conditions. Before the war was over it even began to be suspected that our best was inferior to the arm of the enemy against whom we were pitted. Stores of proper clothing and food were not at hand, and plans for their acquisition had not been made. Plans for the transportation, mobilization and encampment of the forces had not been provided and those hastily decided upon

often broke down under the strain imposed upon them. For a part of these deficiencies the army itself was not entirely blameless. Another weak point in the army, which soon resulted in a fracture, was in the supply and administrative departments. Under the system then existing the officers of those departments were appointed for a permanent tenure. Whether true or not the rest of the army generally considered that these appointments were made as the result of favor and influence. At any rate, the departments were very close corporations and the officers of the line were prevented from acquiring much knowledge of their workings. Between the line and the departments there was little or no sympathy. Although there could be no doubt that the departments were created for the purpose of serving the line of the army, that object had long been lost sight of, and the departments had grown seldom to seek the advice or consider the needs of the line. Great stress was laid on the value of long tenures in having made experts of their officers and on the consequent impossibility of displacing or replacing them. Nevertheless, when war became certain, large numbers of these officers, seeing greater individual glory and gain in service with troops, sought to return, and many did return to the line with all the advantage that whatever influence might have accrued to them could give. Thereby officers of the line were shut out from positions that they had hoped and believed themselves entitled to fill, while the departments, which should have been awake and alert and straining every fiber to equip and care for the army in the field, were crippled by these withdrawals from their ranks of officers who claimed to be, and doubtless were, experts in the work they were now leaving to be performed by officers of the line with little previous experience, and by civilian appointees with absolutely none. Among the acts of army officers perhaps none were considered by the army to be more reprehensible than this.

Finally, under numerous handicaps, thus imposed, month after month was frittered away and lost in attempting to complete the necessary reorganization and training before the army could take the field.

From these experiences a number of lessons have been more or less well learned, either by the army alone or by both the army and the people at large. Among these the first to be made so plainly evident that it could not be evaded was that

we needed a more numerous army. Hence there came about a permanent increase in the force.

It was seen that plans must be made and organization completed, as far as possible, before the opening of a war, and for this purpose, mainly, we have created a General Staff. Further, it was demonstrated that the old volunteer system is ineffective for ready use.

The National Guard must be put upon an entirely new basis.

Material for an army at probable war strength must be provided beforehand and kept well up to date.

Plans and practice are needed in transporting, mobilizing, camping, subsisting and handling troops in large numbers. Some of this is now being accomplished in the annual maneuver camps.

There should be as wide as possible a dissemination of knowledge pertaining to the proper conduct of the supply and administrative departments throughout the army. For this reason the detail system has been inaugurated and is now in operation.

These departments require a real devotion to duty of the officers serving in them, and must not be crippled by their withdrawal, in war time, in any case not manifestly for the greater good of the service.

The army should not be prostituted to pay the debts and favors of any political party or person.

Time must not be wasted in training after war begins when it is in any way possible for training to be finished before.

Admitting, now, that certain things were found to be true, and that, from these, certain lessons have been learned, it will be well to inquire how deep and lasting are the impressions these lessons have made.

With the present ideas in vogue of shaving down the numerical strength of the army to as nearly as possible its minimum limit, its training is once more carried on under very considerable difficulties. With a strength of a company fixed at a maximum of sixty-five, after making allowances for its being hardly ever continuously filled, the number of men daily deducted for guard duty, fatigue, extra and special duty, sick in hospital or quarters, kitchen police, room orderlies, etc., cut down its strength to such an extent that the number available for drills is, ordinarily, about three squads. By such con-

ditions the regulations duly provided for its training are, in a measure, nullified through the impracticability of carrying out or even illustrating the intentions of the regulations with such small units. The proposition has frequently been seriously put forward to prohibit re-enlistments, on the theory that enough benefit would be derived by the whole country, by thus increasing the number of men who would have experienced three-years' training and then returned to civil life to more than counterbalance the ill effect on the army of losing the services of the experienced old soldier. Rather than commit this error it would be of far more benefit to increase the number of men in training by filling up the ranks and allowing a sufficient number of men to properly handle the tools and the methods that are put into their hands to use.

Under the old *régime*, before the Spanish War, the service suffered from a shortage of officers with nearly all organizations. After the recent increase and reorganization it was hoped that this impediment would be diminished. But new fields of necessary labor have developed and, as the number of officers increased, their duties more than kept pace, both in number and severity, and the number of officers now on absent duty leaves the organizations in as poor if not worse condition than they were before. Battalions are being commanded by captains who have also to perform the duties of company commanders. It is a rare thing that a company has its full quota of officers. Much oftener it has only one, and it is not an infrequent occurrence when there are none. Officers are therefore frequently being moved about from one company to another, in order that someone may be in command, and so frequent are the changes that officers are seldom able to become acquainted with their commands. If a battalion finds itself alone for a time some of the companies are apt to be compelled to stagger along without an officer in actual command. All of which makes for rapid deterioration. At present, as in the past, efficiency is being sacrificed to economy. There are various ways in which the shortage of officers could be remedied. For instance, the vacancies caused with organizations by the withdrawal of officers detailed for duty on the General Staff should be filled as is done in the similar cases of officers detailed to places in the Department Staff. A portion of these needs will be thus looked after, perhaps, but it is scarcely to be expected that anything like complete relief can be soon provided.

As for the General Staff, it appears now to be satisfying the needs of the service as rapidly as circumstances will permit, and must be allowed to prove its future usefulness. There is no doubt it will go far to provide adequate plans for organization and preparation for war conditions, but in order that these should be complete and thorough in every respect requires an education of the people to an appreciation of the real needs of the military branch of the government that only time and constant effort can bring about.

That the old volunteer system will take its place in the background, to provide a final reserve, must be insisted upon, but will meet with such resistance as to long delay its accomplishment.

While the National Guard has been strengthened, it possesses such inherent and apparently ineradicable weaknesses that its usefulness is seriously impaired. It is not truly national, and no State force can well become immediately effective for the prosecution of a war.

We may congratulate ourselves that the material of the army is, in the main, well up to date. With the close touch now in existence between the line and the departments, the interest of each in the other is likely to keep it so and, probably, improve it rapidly unless a reactionary spirit again secures the upper hand.

In this very improvement the detail system has already demonstrated its usefulness and, possibly after some modifications, will continue to do so unless the reactionaries should succeed in upsetting the whole system or details be allowed to repeat themselves again and again until the real good to the army at large is lost.

That the departments will still lose some officers at the outbreak of war is to be expected, but it is to be hoped the evil will not again be so great. At least, if the detail system is allowed to carry out the original intention of its creation, there will always be a much greater number of experienced officers in the army who will be able to take up the work at once, when called upon to do so, instead of merely doing the best they can until costly experience has been gained.

While everyone, civilian and soldier alike, will admit the desirability of keeping the army clear of politics, and political and social influence, it is not to be expected that it will ever be completely so. There is this to be said, that the more

nearly we are prepared with our plans, and the less confusion we can have at the outset of war, the less will be the influence of the politician at that critical moment.

Finally, the time lost in training, at the next call to arms, will depend upon how well we have organized and laid our plans beforehand. In other words, how much we shall learn of what we have yet failed to learn, and to what extent we shall be able to enforce the application of these lessons.

In the discussion of matters of which we have yet to learn it must be considered that this is only a convenient expression to describe an existing state. It is not meant to imply that all these matters have not been learned by the whole or, at least, a part of the army. The trouble may often lie in the non-application of a thoroughly recognized principle, and the non-application may be the result of preventive conditions in our national life, or of other obstacles entirely outside the limits of army activity. But to learn signifies learning by the non-military citizen as well as by the soldier. There are but few of the officers of our army seeking merely personal advancement. As a body they have only the best interests of the nation at heart, and when the realization of their desires for the nation's safety and progress depends upon the enlightenment of the civilian body it is the duty of the army to lend its every effort to promote such instruction.

At the very threshold of inquiry lies the most serious problem of all, for which, as yet, no satisfactory solution has been adopted. That is, how to have ready, at the beginning of hostilities, a sufficiently large force to oppose to that of any power with which we would probably find ourselves at war. It is one of the conditions of our national life that we are now precluded from maintaining, in peace times, an army of anything like sufficient strength to take and keep the field, alone, against that of any other real power. Barring this solution, therefore, it is an imperative duty to find another that will provide us with some adequate force that may be quickly added to the Regular Army when necessary, and that will prove to be immediately effective. The value of a volunteer force, as an adjunct to the military arm of our country, is indisputable, but we have made the mistake of regarding it, not as an adjunct, but as the force of first and main reliance. We need not prove that it cannot form the first line, which will have to meet the shock of combat with troops of modern

military training, or that it cannot be regarded as the backbone of our army. That has been proved, over and over, by experience. In any international disturbance we must stand ready to meet the shock of battle at a very early period. We must be prepared to look upon the preparation of munitions or the mobilization of troops as the immediate forerunner of action. The beginning of the war now in progress between Japan and Russia is no isolated case. In all wars of recent date acts of hostilities, often amounting to actual combat, have taken place before a formal declaration was made by either side. Volunteers, as we understand the term, cannot be called upon until war is assured or, in other words, until war has begun, and then the mobilization, organization and training of such an absolutely raw force is slow and laborious. Before they can be put before the enemy in the field, with the slightest hope of accomplishing anything with them, several months will have elapsed; but several months will not have passed before we shall be forced to meet and engage an energetic and ready foe. What other force, then, can we use?

The National Guard has now been placed by law on a semi-national footing, and has been stiffened and better provided for. If it could be really nationalized, careful and diligent handling might create a force of considerable potentiality that should be able to take the field much more quickly than volunteers. Yet it must not be forgotten that it is subject to many decided limitations. It is and always will be a state force. It is essentially a popular organization and must remain so, for it depends upon its popularity for its strength of numbers and apparent success. We may pass over its minor faults, such as the popular election of its officers, as matters permitting of remedy. But there are fundamental weaknesses that do not admit of any remedy. Its members, men with no other military training, are habitually engaged in various civil employments that were first, and must remain first in their consideration. To weld them into a homogeneous and effective force demands that they be compelled to devote a considerable part of their time to the work of the soldier, and as the Guard is further nationalized and improved, this demand will become more imperative. But step by step with this growing demand grow civil conditions that will make it more and more onerous and difficult for the guardsman to comply with. The use of the Guard as a police force brings it into conflict with a

section of the population that resents and threatens its very existence. As this section is growing in strength through the powers of trades-unions and the immense weight with which they are beginning to be credited in politics, their opposition may well be considered serious.

The experience of recruiting officers, inspectors of the National Guard, and particularly of those who have examined and mustered in volunteer troops, shows that Guard organizations find it necessary to accept a large number of men who, judged by service standards, are of inferior physical quality, and whom therefore the government must reject at the last moment, when they are called into service. Another large class, who can and do serve well enough as guardsmen, find, when called upon for service in war, that they cannot comply with the summons, and no number of laws and regulations will prevent the necessity of excusing them. Owing to these causes, the strength of the Guard, when most needed, is greatly and unavoidably diminished.

In view of these objections to the present methods of raising a supplementary force, there is a vital necessity for organizing a true reserve of men who shall have enough training to be immediately available at the outbreak of war. I am not for the first time proposing the formation of a Veteran Reserve, but the necessity seems to me so great that the idea and the plans for its organization should be kept constantly at the front. There is now a splendid force of trained and disciplined men, consisting of those discharged from the army upon expiration of term of service, literally going to waste for want of the attention and the small amount of legislation and expense necessary to conserve it. Under our system, since all service is absolutely voluntary, it is not possible to form from these men a compulsory reserve unless we are willing to adopt some form of conscription. Nevertheless, it seems reasonable that a large part of the men who have had from three to nine years of service and know what the army really is would voluntarily enroll themselves as members of a reserve whose exactions are but a fraction of those demanded by constant service with the colors, for a cash compensation which, though small, would be an inducement for them to keep the War Department informed of their whereabouts and to be prepared for the few duties they would be called upon to perform between the dates of their discharge from and re-entry into active service. It is probable

that a very few years would be sufficient in which to thus enroll a reserve of such numerical strength that, making allowances for all necessary deductions, it would be able to take the field with at least the strength at which the Regular Army had been previously maintained. Of course its members could not remain reservists, the rest of their lives but, within reasonable age limits, they would have the advantage over all other reserves of having been once thoroughly trained in a system as complete as any of its kind in the world, the effect of which would never be lost upon them. With proper plans for their mobilization, stores for their equipment in readiness, and capably officered according to a rational system, they would be ready to take the field with very little delay.

Within the limits of this article it is not practicable to go far into the details of plans for the organization and handling of such a force. It will not be amiss, however, to say that its higher officers should come from the officers of the Regular Army, according to a fixed scheme which will keep them always in readiness and will put the seniors at the head, so that all grades throughout the army will be equally benefited. The lower grades should be filled by duly qualified enlisted men of the army, and by civilians who have received training at a military school or in some similar manner. In this way the proper ambitions of all officers will be stimulated and the men will find themselves under officers who are fitted for command and in whom, from the first, they can feel complete confidence.

For the Regular Army itself, some reformation must be made looking toward keeping the various commands more nearly intact, and at such a strength that their training may be a real preparation for war service; otherwise they cannot be brought to that state of readiness expected of them. And when the critical time comes, if we are in any wise lacking, it is we who will bear the blame, no matter who may be really at fault. The wish to cut down the strength of the army to its lowest possible figure in order to produce a favorable political impression must, if we are to have a truly effective army, be subordinated to the needs of the service. It is only on the stage that the ideally perfect army exists without commanding officers and enlisted men. At present our military workers are in a position somewhat like that of the Israelite brickmakers in Egypt—they are commanded to

make bricks without straw. Is the artilleryman demanding too much when he asks for men enough to handle his guns, or the cavalryman or infantryman when he asks for enough men to enable him to drill his troop or company correctly in the movements prescribed by the drill regulations? Speaking for the infantry, the captain should have available for drill, at most times, eight squads. As that calls for sixty-four men, if the squads are complete, it cannot be done with a company whose maximum limit is sixty-five. A company whose limit is the latter number is usually recruited to about fifty-seven, actually, and turns out three squads for drill. If the present methods were followed in every respect, about one hundred and twenty men would be required to furnish eight squads. If proper provision were made for workmen, a strength of eighty would be amply sufficient. Habitually, the place of the soldier is in the ranks of his company, clothed in his proper uniform and being taught the management of the weapon that is given him to use; not in the grimy habiliments of a coal heaver or a ditch digger, engaged in labor that is distasteful to him and which he does at the expense of his own and his company's efficiency. Mechanics, plumbers, blacksmiths, carpenters, painters, teamsters, laborers, whether their labor is that of a stevedore, a storekeeper or a clerk in an office, should no longer be taken from the ranks of the fighting men, but should be furnished by an army service corps, enlisted for those very purposes. The demoralizing extra duty and extra duty pay should go, and there should be few men on special duty. A great part of the fatigue work, whether old guard or extra, should likewise be taken over by the enlisted laborer.

In attempting to improve any branch of the army, moreover, we must avoid the error of supposing that one can be improved at the expense of another. For example, everyone concedes that the Coast Artillery must be greatly augmented, but this increase must not be accomplished by diminishing the mobile army, small as it already is. The proposal to do so has been explained by the statement that the Navy and Coast Artillery should be made so strong as to hold off an attacking enemy long enough to allow an army of militia and volunteers to be organized. Such are the views of a non-military man who wholly overlooks, at the outset, two vital truths that baffle the accomplishment of such a plan.

First,—two of our four lines of frontier are wholly land lines, where battleships and heavy artillery would be of no more value in resisting an invasion than the pawns of a chess board. What is to stand along those thousands of miles while raw levies are being formed and trained? Field artillery, cavalry and the chief arm of defense, infantry.

Second,—no war was ever won on purely defensive lines. To speak of confining our warlike operations to defense is absurd. Forces should be provided for offense as well as defense in order that, if forced to go to war, we may end it as quickly as possible by assuming the offensive. Nothing will ever illustrate this fact better than the Spanish-American War. It was quickly completed to our advantage, but not by the navy and heavy artillery. The latter had no part in it. Had it been left to such a course it would have dragged on at an expense of millions on millions of dollars, and, finally, we would have had intervention by a combination of other powers. Instead, every blow by the navy simply opened a demand for a mobile army to complete their work and to make it decisive. In both hemispheres arose a call for an army of the mobile arms that had to be answered. Volunteer troops could not then fill the requirements, nor can they do so in the future. Troops handling weapons and methods of a more technical character than those in use by the infantry must, indeed, be kept up; but it must not be forgotten that the latter has also to undergo its technical training, and that it must be maintained in a state of readiness and in reasonably large numbers. The two armies we sent forth in 1898 were composed chiefly of that arm, the main strength of offense as well as of defense, since no offensive movement can be driven home and made decisive except by infantry.

Reference has already been made to the deplorable lack of officers and the necessity of providing a greater number on duty with troops. In the first place, the training and the work of the officer should be in affairs military and not civil. The retired officer may, in many cases, be able to satisfactorily replace his brother on the active list so as to allow the latter to return to really active duty. But if the vast amount of collateral duty requires the services of so many active officers, the number of them must be correspondingly increased. When places are to be filled by the detail of officers for a con-

siderable time, or are filled continuously by the detail of one officer after another, such as positions on the General Staff, or at military colleges and schools, provision should be made for filling the places made vacant by their withdrawal from duty with troops by promotion as is now done in the similar case of details to the department staff. The tale of bricks will be neither complete nor flawless unless there are an adequate number of brickmakers as well as a sufficient supply of straw.

The General Staff and the detail system for the departments are too new to warrant serious adverse criticism, and the complaints now made in some quarters must still be considered as lacking sufficient foundation. But the handling of detail privileges in the past should warn us to be on the lookout for one pitfall that may, if it be not avoided, wreck the whole well-ordered machine. Despite laws and regulations designed to repress them, there have always been a number of officers who are detail and special duty seekers by nature. Laws, orders and regulations are set aside or evaded for their benefit. Having once secured a detail, it is either renewed at the expiration of its original term or they go from that to some other in spite of any and all enactments that they shall return, at stated periods, to duty with troops. For these officers the new and numerous places opened to them under the recent detail reorganization will afford choice picking if firm measures are not adopted to prevent it. It is possible for them to defeat the entire object of the detail system by extending the class of detail officers so that the positions will constantly rotate among them, thus cutting off the proper aspirations of others and excluding the great body of the army from obtaining the knowledge that should be as widely distributed as possible among its officers. The hope of the army may thus be made its curse. The operations of a detail system so deflected from its proper course would be worse than the former system of permanent tenures.

A desire for personal renown and advancement, like the desire for money in civil life, is, with us, one of the mainsprings of military accomplishment. This ambition is the result of centuries of precedent and training of our race. Like the craving for fortune and the power that money gives, it seems to us, within certain bounds, to be commendable. At any rate, rank, power and the plaudits of our fellows are

the blinding lights that lure us on, and, right or wrong, he who does not seek them is considered by the world to be lacking in strength. But again like the lust of gold, this ambition unchecked involves wrong, repression and ruin somewhere. It may not be clear, at first sight, how such an ambition can prove a detriment to the army and the country that it nominally serves, but no other illustration is here needed than to point again to the serious crippling of important departments by the voluntary withdrawal from them of officers, at the outbreak of war, to positions that seemed to them to open the way for the gratification of these ambitions.

I have attempted, so far as possible, to avoid introducing illustrations and incidents observable in the conduct of the Russo-Japanese War, for a number of reasons. First, I wish to avoid every word and sentiment that smacks of partizanship. Second, it is human weakness to blindly run after and attempt to copy the apparently successful. But the fact is that it is also our duty to soberly reflect upon the lessons the Japanese have to teach us, and to try if we cannot help ourselves by them rather than to close about us a shell of racial prejudice and imagined superiority. As matters now stand, they are successful and, no matter what may be the final outcome, they have astonished the world by winning, from the apparently impossible, a success that can never be denied them. It is well for us to inquire what are the traits and the methods by which this success has been won, and to try how far we can engraft them upon ourselves for our own benefit. It is admitted that one of the strongest points of Japanese character is the desire, when fighting is to be done, to be in the ranks of the fighting men and to lay down life, if need be, for Japan and the emperor. But it is equally agreed that no unsightly scramble for place, power and popular applause is taking place. No matter where placed, it is expected of the Japanese that he will do his work with the interest, the zeal and the completeness of every other man. Every part of the army must do its work as well as every other part. Where every man belongs to the gods there is small room for the little hero we one day set up and the next cast down; beside their broader sense of purpose our uncertain and evanescent rewards seem cheap and tinsel. Our training has exalted the individual above the collective—above the community and the state. Theirs has submerged the individ-

ual in the state—he exists only for the public good. When need comes again will we have learned to submerge our now triumphant individualism so far as to allow the common good to rise above personal ambition?

Closely connected with this subject is the problem of keeping the army free from political influence. The point at which our political system has arrived seems the very apex of vaulting individualism. Try as we may, the army cannot be kept very different from the remainder of the people surrounding it, for it comes of the people and the people wish it to be more and more their own. Politics furnishes the means for gratifying the ambition of the individual in, as well as out of the army, and no system invented by our race furnishes a solution. The outlook does not seem bright, for when an attempt is made to free one part of the military system from political influence, some other portion will be found to be suffering the horrors of a prostitution worse than ever before, the relief of one part and the oppression of the other, perhaps, bestowed by the same hand.

The question of transportation for the army is deserving of more attention than has yet been bestowed upon it. For convenience of brief discussion the subject may be divided into four classes: marine, wagon, rail and pack transportation. The Spanish War and the Philippines have led to the development of our deep-sea transportation from nothing to a very efficient and satisfactory service. To claim perfection for it would be too much, but, considering our total lack of experience in 1898, the rapidity of its development has been remarkable. We have only to remember our woful experience with chartered transports in 1898, to urge us to resist the efforts of private interests, operating politically, to have the Government transport service discontinued for their benefit. Little need be said of wagon transportation which, for its own use, has stood a long and severe trial.

By pack transportation I mean any means of transporting property in small loads so as to obtain the maximum of mobility. The method most familiar before the Spanish War was by pack-mules. Philippine experience has introduced to us the pony cart, the coolie bearer and the burro. But practice in the use of any and all these means has been sporadic and intermittent. They should not be left for application only at the last moment, depending upon invention to maintain the

relation of dutiful son to necessity. All are useful and necessary under various conditions, and their use should therefore, be made more familiar to the army at large.

It is in the matter of transportation by rail, however, that we are most careless. All this business is, necessarily, done by contract with corporation-owned roads, and therefore but little real study has been put upon it by anyone, in the army or out. When troops or property are to be moved the chief concern of the army supervisors of the movement is to get the necessary papers accomplished in an exactly proper manner. Of the railway company, to fulfil their contract with the least possible trouble and expense to themselves. That is, of course, only a matter of business. Neither party, therefore, has seen fit to look forward to the coming of inevitable emergencies, or to provide for their handling in such manner as to prevent congestion of traffic, bring troops and stores forward without delay and deliver them without confusion. Rail transportation is our chief means. With the wide expanse of our country and its many lines of railway, it concerns us more than any one, perhaps of all the other methods, and we must give it the attention it demands.

Frequently as troops have been transported by rail in the last six years, it would seem that everyone should have gained knowledge and formed plans that would prevent hesitancy and confusion in, at least, the entraining of them. Yet how often do we see commands performing this initial step of a journey by rail with less preparation and order than are ordinarily manifested in the loading of horses! Arrangements made without reference to the commander of the troops to be transported are therefore more or less unknown to him. If fortunate enough to find their trains and baggage, there is no guarantee against hours of fruitless wrangling over inadequate car space or berthage, the order in which companies are to entrain and the cars to which each is to be assigned. If the amount of baggage will not allow of the use of a baggage-car as a commissary and kitchen-car, no provision is made for the extra space in the others to accommodate these necessities. Car porters are left to be provided for by the troops at the expense of their own comfort. When, finally, the task of entraining is accomplished, everyone concerned is tired and disgusted. The needs of the troops should be consulted and the control of their commander should begin at an earlier period—long

before the command reaches the entraining station. Then everything will be known beforehand—the exact number of cars and the equipment of each—and timely corrections can be applied. Each troop car can be marked with the exact number of men from each company that are to occupy it, and the work of entraining any body of troops should consume but a few minutes.

One more question of detail to be carefully considered is that of obtaining the best quality of enlisted man and of developing the material so gained to the highest degree. At the very beginning of this subject I wish to repeat the appeal so often made for a military prison. The necessity for this seems so patent to all officers serving with troops that it is scarcely necessary to reiterate it here, but the appeal has been mad: again and again, and has not been answered.

It is inevitable that all sorts of men—good, bad and indifferent, should enter the army and should be disposed of in a manner analogous to dispositions made in civil life. The good men go forward in the army or leave it, the better for their service. The bad follow their evil impulses, to their eventual undoing; and the indifferent must be carefully tended to prevent their becoming of the bad rather than the good. In civil life, throughout the country, criminal affairs are so handled that there are both penal and correctional institutions provided. The lad who steals a pie is not incarcerated with the burglar or the murderer. In the best ordered systems there are industrial schools, reformatories, intermediates and penitentiaries. The system is carefully designed to save the young and those guilty of minor offenses from the contaminating influence of the hardened criminal, and to aid them to live right. Yet, as the army guardhouse now exists, it houses and herds the deserter, the drunkard and the hardened offender o long standing, together with men not at all criminal, but guilty of some lesser dereliction that necessitates their confinement as an example in the interests of justice and discipline. Besides this the prisoners require the services of a large number of soldiers to guard them at work, taking these soldiers away from their proper duty with their companies and imposing upon them a hard and extremely disagreeable task. The work the prisoner performs is called hard labor, but is usually lighter than that of the sentinel who guards him. There is always danger of a prisoner's escape, with the certainty that, if he

does, the sentinel will himself be confined in the guardhouse and have to stand trial on a serious charge when, perhaps, no guilt attaches to him. All general prisoners should be removed from post guardhouses immediately after trial and confined in real prisons.

The positions of non-commissioned officers, in our army, are not of sufficient value to be an incentive to enlisted men to work for them and to keep them, once they have been obtained. Now, even the position of sergeant is so lightly valued that men holding it are perfectly willing to lose it through transfer or neglect to re-enlist at the merest whim. To begin with, the increase of pay over that of a private does not compensate for the additional work and responsibility. Second, there is not the proper provision for the further advancement of non-commissioned officers of special merit or long and faithful service. To illustrate the underpayment, one may cite the anomalous case of a post quartermaster-sergeant and a civilian clerk employed in the same office. From the very nature of things the sergeant must be the responsible man, and the clerk must be, more or less, his subordinate; yet the clerk is paid a salary more than double that of the sergeant. In justice to all, let all salaries be commensurate with the value of the men required. It will require an increase in the salaries paid to all grades, but men of worth are able to command more money nowadays than when the present schedule was fixed, while the cost of living, especially in the case of an officer, has vastly increased.

The opportunity for men in the ranks to obtain commissions, as it now operates, benefits a special class of young men, most of whom enter the army with that as an object. They remain in the ranks but a short time and do not aid materially in building up and improving the service. The old, long-service non-commissioned officer whom it should be our duty to encourage and reward is not benefited in the least. The places are not open to him. All he can now aspire to are the few places on the post non-commissioned staff. Something brighter should be held out to him. With the organization of a veteran reserve, such men can be assured of positions as officers in the lower grades of the reserve should it be called into service. Warrant rank, such as exists in the navy, may be established for the more immediate and certain promotion of those proving themselves qualified and

worthy. These warrant officers would serve the further useful purpose that they might be able to relieve some of the active commissioned officers now engaged in collateral work, and so allow them to return to their more legitimate duties. Further, they would be a splendid source, in war time, from which to provide officers of reserves and the extra officers inevitably needed in the supply departments, where their experience would stand them in good stead and render them invaluable servants. With these things to point to we can raise the dignity and the valuation placed upon the position of the non-commissioned officer, and thus elevate, at a bound, the whole purpose of the enlisted force of the army.

But at the very foundation of all hope of improvement is a quality the lack of which will handicap our every effort. In our zealous support of the democratic theory we have come to feel some scorn of the term "esprit de corps." But there is such a quality; it is meritorious and deserves cultivation. Perhaps it would be better to describe it by another name. Let us speak of the development and maintenance of an enthusiastic spirit. It is, so far as concerns us, a form of patriotism. The American believes his country is, or he would make it the best in the world. To the army man our army is, or should be, the best. To the infantryman his arm should excel all others in the army, his regiment be the best in the service, his company the best in its regiment. He may, perhaps, not always feel that his organization is the best, for that belief may take the form of failure to improve, and so result in dry rot. But he must be on the lookout for opportunities to lend his aid to put it at the front and, thereafter, stand ready to keep it there by meeting and vanquishing all comers. There are a thousand methods for promoting such a spirit that will occur constantly to one who is observant. Scoff as we may at tradition, it produces effects that are attainable in no other way. It is right for us to know and take a pride in the accomplishments of those that have gone before us. The hardships endured, the battles fought and the victories won by our regiments and companies in the past have been endured and fought and won by our forefathers in arms. Let us make them our forefathers in sentiment as well as in fact. We will rapidly do so if the opportunity is given us. Every regiment in the service should have its history written in such a way as to make plain that of each company that

composes it. Not as a mere dry, dead tabulation of facts, printed in a pamphlet and laid away as soon as off the press, to molder among official reports; but as a history is written to secure readers and to interest and arouse in them a pride that they are heirs to the fruits of great deeds. Let there be not one copy nor half a dozen, but so many that every officer of the regiment can and must possess one, and every company at least five or six. Let officers and men be encouraged, even compelled to read and to be well versed in the story that it tells. Let us possess it as our own. It is not a matter of boasting, but one of honor, to know and be proud of the men and the deeds that have been before us.

Our volunteer forces have always, in one way, possessed an advantage in the pride of locality—usually of a State. They looked to friends and relatives at home for praise and encouragement, and they did not look in vain. The people at home looked to them to perpetuate and increase the name and fame of their community. Looking again to illustrations from Japanese experience, we see this and something more. There is not only a local pride of the Sendai men, of the Osaka regiments, but we hear of the Twelfth Division, of the Tenth Regiment, of the Fourth Company. In the veteran reserve which I have proposed these sentiments will also be combined, for it will be localized by regiments and also closely attached to the Regular Army by origin. The Regular Army man takes a quiet pride in the Regular Army. Let his pride be nurtured. Help it increase, not only in the army, but in his regiment, his company, and in himself. Away with a makeshift uniform whose characteristic is ununiformity, and give him a permanent, attractive one that will help him to feel that a soldier should look the part of a soldier and not that of a slouch and a rake. His warlike work will not be the less well done for his having been able to feel before it begun that he was truly a soldier.

Give him, when he has done this work to which his life is, for the time, dedicated, an emblem to show what he has done. The navy has, for many years, given its officers and men campaign medals which they are proud to receive. After the Spanish War it was proposed to do as well by the army. Why has it not been done? Is it thought the army does not desire these tokens? If so, someone has sadly misconstrued its spirit and its wish. They are, to the soldier, a source of pride

and satisfaction, and they will be to his posterity a priceless legacy. It is not in the public school, but in the home, where the sword or the rifle of the father and the grandfather first awaken the glowing fires of patriotism.

The possession by regiments of coats of arms is neither snobbish nor un-American. They are emblems its members should be able to wear with pride, as everywhere distinctive of the regiment and indicative of its history. To the soldier they have the sanction of generations of his fathers who went forth bearing arms. Help him to look back, now and then, in order that he may better look forward. Emblazon on the colors of his regiment the names of its battles, that all may see and note what manner of men once fought under them, and we may be sure that a like manner of men will fight under them once again, when there comes the call to battle.



FIELD AND SIEGE OPERATIONS IN THE FAR EAST.

By Colonel WILLIAM R. LIVERMORE, U. S. A.,
Corps of Engineers.

IN discussing so vast a subject as the present war in the East, all that can be attempted here is to give a cursory view of the events of the campaign so far as to refresh our memories of the accounts that have come in a fragmentary shape from time to time, and then to express an opinion as to the light that these accounts may throw upon the character of a modern battle, first, as it is, and then, as it should be conducted, whether in the open field or in siege operations.

It would be foreign to the subject to discuss the causes that led up to the war, which are as hard to defend on sentimental grounds as those between the descendants of the Pilgrim Fathers and the North American Indians.

It is only fair to premise that the information on which this article is based has been derived from sources accessible to all and not from any information received through official sources.*

The published accounts, when sifted and weighed, throw much light upon most of the doubtful problems of modern warfare, but any opinions based upon such sources must be subject to modification hereafter.

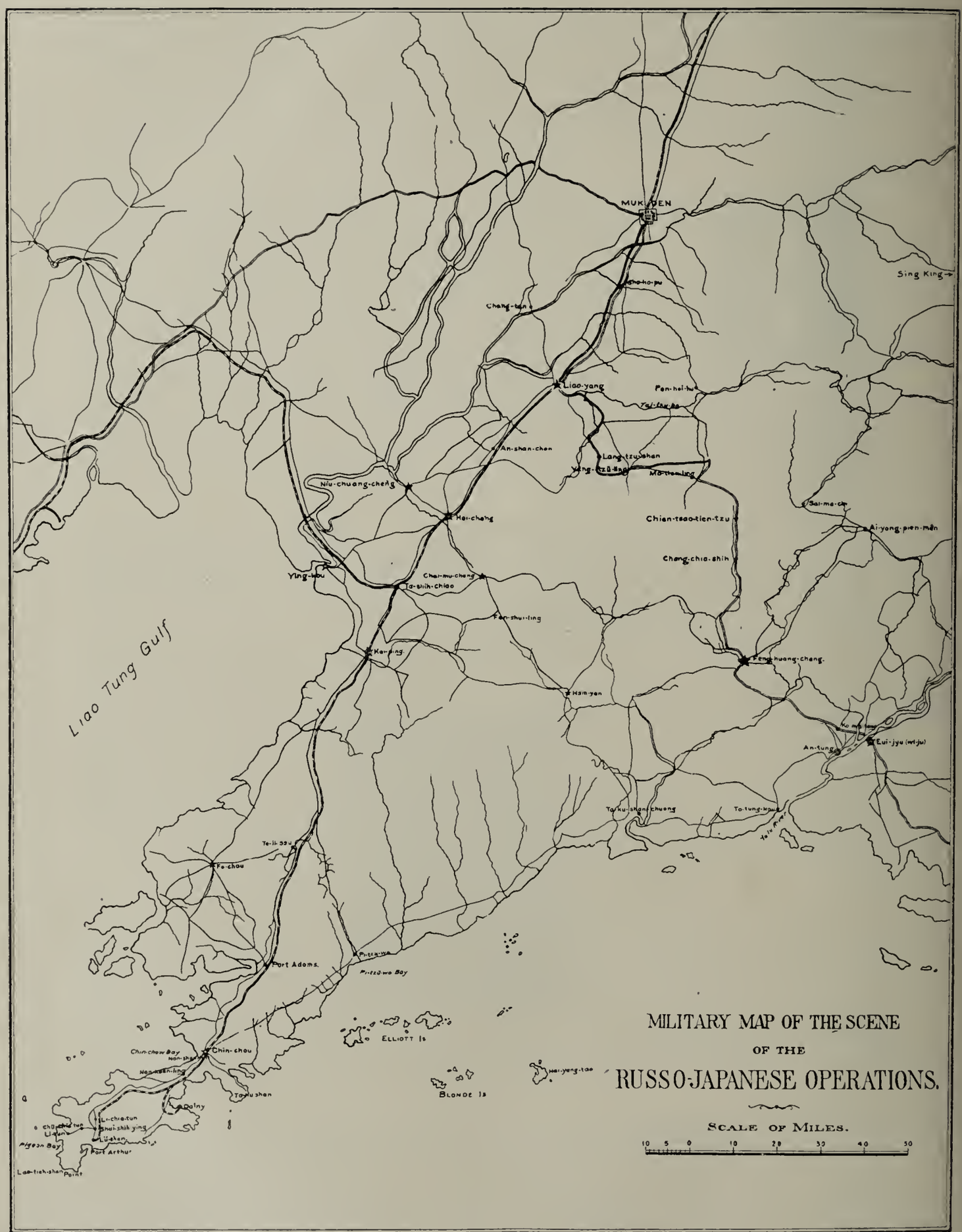
GENERAL OUTLINE OF OPERATIONS.

At the outbreak of the war the Russian Navy was at least twice as strong numerically as the Japanese. The numbers in the Far East were about equal, but the Russian fleet was divided between the harbors of Port Arthur, Vladivostock, and Chemulpo, while another battleship was on its way from Europe.

The Japanese had spent ten years in preparing for this war, and had assembled an army of several hundred thousand men, thoroughly drilled and equipped, and the war had been rehearsed in all its details.

It was generally believed in Europe and America that Rus-

*A list of authorities will be given hereafter.


MUKDEN
Sing King
Liao-yang
An-shan-chen
Niu-chuang-cheng
Hai-cheng
Ying-kou
Chai-mu-cheng
Ta-shih-chiao
Fan-shui-ling
Ka-ping
Hsim-yen
Feng-huang-cheng
Chang-chia-shih
Chien-tsao-tien-tzu
Ai-yong-pien-mên
An-tung
Eui-jyu (wi-ju)
Liao Tung Gulf
Fo-chou
Port Adams
Pi-tzu-wo
Pi-tzu-wo Bay
Chin-chou
Chin-chow Bay
Elliott Is
Blonde Is
Hai-yang-tao
Talu shan
Dalny
Port Arthur
Pigeon Bay
Lao-tieh-shan Point
MILITARY MAP OF THE SCENE
OF THE
RUSSO-JAPANESE OPERATIONS.
SCALE OF MILES.
10 5 0 10 20 30 40 50

sia, while promising to evacuate Manchuria as soon as her railroad was safe from interruption, was in reality massing an army there of about 200,000 men. It is now estimated that at the outbreak of the war she had only about 50,000 Cossacks and Siberian riflemen in the field to oppose the armies of the Japanese, but all these estimates must be taken with reserve. Whatever may be thought of Russia's motives there can be no possible doubt of the fact that she did not expect war and did not want it.

On the 7th of February, 1904, the Japanese captured a merchant vessel called the *Rossia*, and hailed the name as an omen of success. On the following day the Russian cruisers *Variag* and *Korietz* were destroyed at Chemulpo. On the night of February 8th to 9th the Russian battleships *Tsarevich* and *Retvizan* and the cruiser *Pallada* at Port Arthur were torpedoed. On the 9th, the Japanese landed at Chemulpo; on the 10th they occupied Seoul; on the 13th another torpedo attack was made on Port Arthur; on the 23d the Japanese attempted to block the mouth of the harbor. The attempt was not successful, but the Japanese collected troops and supplies at the Elliot and Miao Islands.

On the 13th of April, Admiral Makharoff, who had recently taken command of the Russian fleet, made a sortie from the harbor, but on the approach of a superior Japanese fleet withdrew, and the battleship *Petropavlovsk*, with the admiral on board, struck a floating Japanese mine and was sunk. The loss of the battleship was a serious disaster, but the loss of the admiral was even greater.

This, for the time being, gave Japan the command of the sea.

The Japanese had collected in the Elliot Islands an immense amount of food and other supplies, and troops in sufficient numbers for a first landing, and a large flotilla of small boats for transporting them. Meanwhile, the Twelfth Division of the Japanese Army which had landed at Chemulpo took possession of Seoul, the capital of Korea, and then marched north to Ping Yang, where it was joined by the Second and Tenth Divisions, which landed at Chemulpo as soon as the harbor was open, forming the first army of about 45,000 under Kuroki.

All Korea was soon in possession of the Japanese without any material resistance from the Russians who never sent more than 2000 Cossacks south of the Yalu River.

It is said that in February, March and early April, all the

coast of Manchuria is ice-bound and that the landing of an army is impossible any where from the mouth of the Yalu to the mouth of the Liao. About the middle of April the ice broke at the mouth of the Yalu and it was quickly swept of mines and occupied by gunboats, and Antung became Kuroki's base.

General Kuropatkin took command in March. Some reinforcements had arrived from eastern and central Siberia, but the Japanese had occupied the greater part of Korea.

Kuropatkin's efforts were directed first to putting Port Arthur in condition to withstand a long siege and then to distributing his forces so as to delay the advance of the Japanese into Manchuria until he could assemble and equip an army strong enough to meet them. As the Japanese controlled the sea they could land on either side of the Liao Tung Peninsula.

The Russian Army with headquarters at Liao Yang was disposed as follows: Stackelberg at Kaiping, Sussolitch on the Yalu, Stoessel at Port Arthur, Sarubayeff at Liao Yang, Hai Cheng, New Chwang and Tashichao.

On the 1st of May, Kuroki, with 45,000 or 50,000 men, met Sussolitch on the Yalu with 15,000 or 20,000, outflanked him and drove him back with great loss. Sussolitch retreated to Feng-Wang-Cheng where a supply depot had been established. Kuropatkin ordered him back to Mo Tien Pass on the ridge that forms the backbone of the Liao Tung Peninsula. Soon after the battle of the Yalu the Japanese cruiser *Yoshino* was accidentally rammed and sunk and the battleship *Hatuse* struck a Russian mine about ten miles out from Port Arthur and was destroyed.

On the 3d of May Kuroki occupied Feng-Wang-Cheng.

On the 5th, the second Japanese army under Oku, landed at Pitsewo. On the 7th, the third under Nodzu, at Takushan, and a little later, a landing was made at Port Adams. Then came a period of apparent delay. Immense supplies of food, ammunition and guns had to be landed at all of these places and new bases formed.

May 15th, the forces from Port Adams and Pitsewo united and cut off Port Arthur from the north. May 26, the battle of Kinchow or Nan Shan was fought between Oku, with the second Japanese army of about 45,000, and Stoessel with about 15,000, from the third Russian corps. The Russians were driven back toward Port Arthur.

Nogi was detached from Oku and put in command of the army of investment, while Oku took the rest of his troops for an army of observation. The Russian Army still occupied the railway between Moukden and Kinchow. Kuroki was at Feng-Wang-Cheng. Nodzu was coming from Takushan to Sinyen, where he arrived June 8th. Each had its own base on the sea. From the commencement of the land operations the Japanese had been careful to secure their positions by fortification and their lines of operations by good roads. The armies were in touch by telegraph with one another and with Tokyo whence they received daily instructions and advice from Marshal Oyama.

The value of Port Arthur is self-evident. The Russian's line of operations was long and weak and threatened in the flank by Kuroki and Nodzu, who were within supporting distance. Soon after occupying Feng-Wang-Cheng Kuroki had displaced a small force in the direction of Hing King which for a while caused quite a commotion at Moukden.

The Russian Army was reinforced regularly but slowly until Kuropatkin had 108,000 men in the field, which about the 1st of June were divided as follows: Keller at Feng-chu-ling, 20,000; Sussolitch at Liao Yang, 46,000; Sarubayeff at Hai Cheng, 16,000; Stackelberg at Tashichao, 20,000. The Japanese Army was reinforced much more rapidly up to 150,000, exclusive of those investing Port Arthur. The garrison of Port Arthur has been estimated at 35,000, the investing army at 60,000.

It is said that the Viceroy Alexieff forced Kuropatkin against his will to send Stackelberg and his corps to the relief of Port Arthur.

June 15. Stackelberg with about 30,000 men met Oku with 40,000 at the battle of Telitzu or Wa-Feng-Goa. The Russians were driven back to Kaipeng. Oku followed, and Nodzu moved westward to join him. At about this time the Vladivostock fleet made a raid on the Japanese transports, inflicted a great deal of damage, and returned in safety.

June 23. The Port Arthur fleet also came out. The entrance had to be cleared of mines, and the Japanese torpedo-boats caused them much delay. But the Japanese fleet appeared and the Russians returned with some loss.

Meanwhile, the Japanese were making roads. Kuroki oc-

cupied and fortified Cheng-chia-shih and Ai-Yang-Pien-Men. The Russians held Sai-Matze.

On the 26th and 27th of June, the Japanese took the passes Fenshiling and Motienling. The Russians were driven back and the roads opened to Kaiping, Hai Cheng and Liao Yang.

The advance on Port Arthur was steadily continued. Each successive position taken was fortified and big guns brought up.

July 1. The Japanese occupied Siamatze.

July 4. Kuroki, with 8000, defeated the Russians with 4000 at Yantze Pass.

July 9. Oku drove the Russians from Kaiping and they then took up a position at Tachi Chiao. Oku attacked them there July 24th and 25th. The Russians had about 30,000, the Japanese had about 50,000. The Russians were defeated and fell back to Hai Cheng and abandoned Yinkow and New Chwang.

At this time the total strength of Kuropatkin in the field was about 125,000 opposed to a Japanese force under Oyama of about 185,000.

July 17. The Russians, under Keller, with 20,000, attacked the Japanese with 15,000, at Motien Pass, but were driven back.

July 31. Kuroki, with 60,000, defeated the Russians, with 30,000 at Yu-Shu-Lin and Yantze Pass. The Russians retreated to Anping and Tang-Lio-Yeng.

August 1. Nodzu, with 30,000, defeated the Russians with 20,000, at Si-mu-chen. Oku occupied Hai Cheng.

August 3. The Japanese occupied New Chwang.

August 10. The Russian squadron at Port Arthur tried to escape, but fell in with Togo's fleet and after a severe battle was scattered. The *Tsarevich* escaped, the others returned to Port Arthur.

August 14. The Vladivostock squadron was intercepted on its way to join the Port Arthur squadron. The *Rurik* was sunk.

August 15. Another sortie was made from Port Arthur. Russians returned without encountering the Japanese.

August 25. Kuroki occupied Yian-tzu-shan, Tang-ho-yen and Anping.

August 26. Oku and Nodzu came up in line which then reached from An-shan-chen to Tai-tze River.

August 26. September 4. Battle of Liao Yang. The

Russians had about 200,000, the Japanese, 220,000. The Russians were driven back to Moukden. Then both armies rested until October 10th, when Kuropatkin issued his celebrated proclamation. The battle of the Shaho lasted for ten days or more.

The two great armies came to a deadlock which lasted throughout the campaign of 1904. The Russian losses were terrible, but Moukden and its resources, and by far the greater portion of Manchuria, remained in their possession throughout the winter.

STRATEGIC FEATURES.

The most interesting feature of the strategy of this campaign is the fact that Kuropatkin, holding the interior lines, was not able to fall upon any of the Japanese armies and destroy it in detail. A general like Napoleon might perhaps have done so if the movements of the enemy had been tardily conducted, but the conditions were very different from those of 1796 or 1814.

Kuroki was never out of telegraphic communication with the other armies until the battle of Liao Yang, and Frederick Palmer describes the terrible feeling of confusion and desolation that this isolation produced.

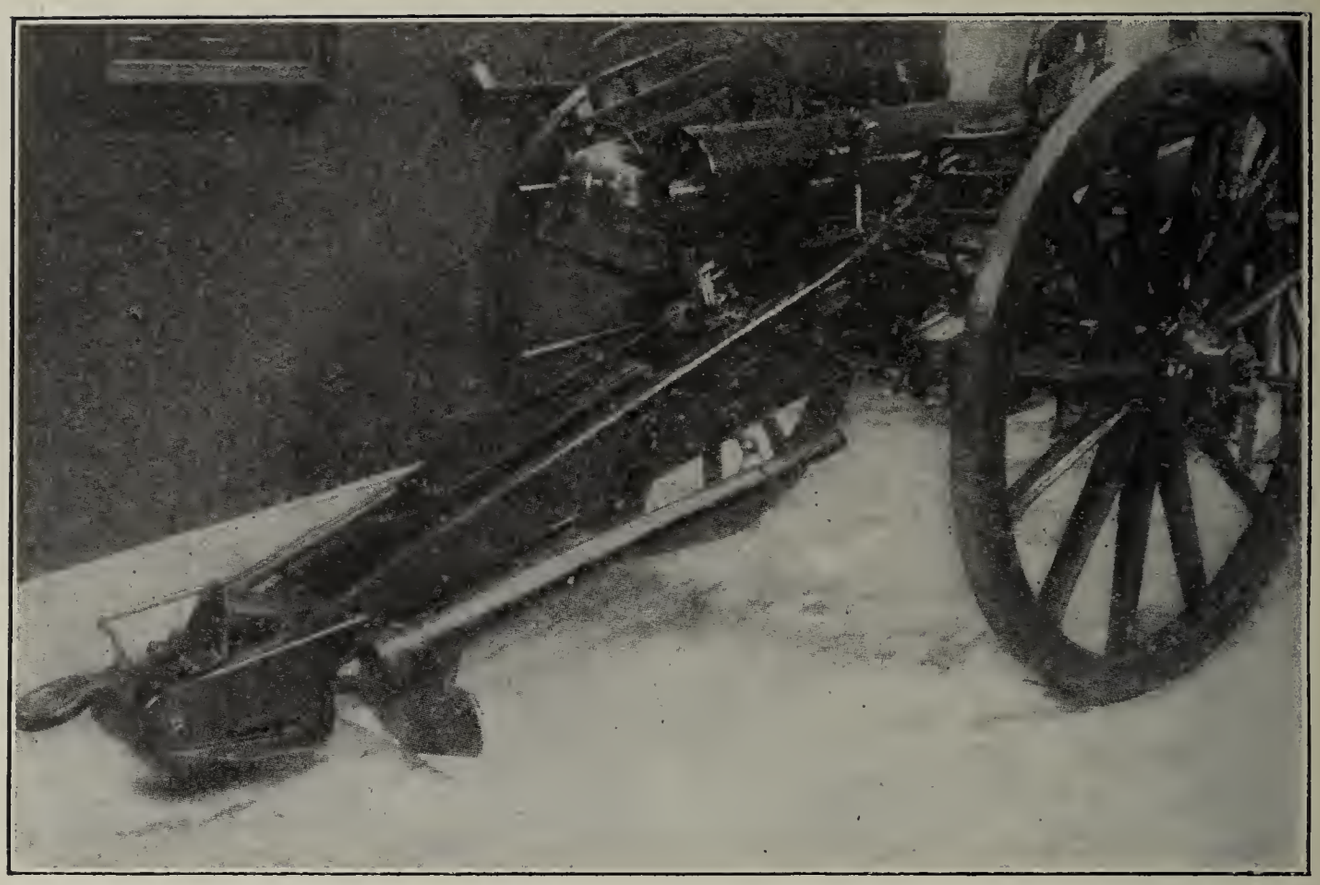
The superiority of modern firearms extends the front which an army can defend and the ridge of mountains that forms the backbone of the peninsula multiplied the number of defenders by four or five and it is hard to say whether we should regard all these operations as a strategical campaign or as a continuous battle over a front of more than a hundred miles.

At the first glance it might appear as if Kuropatkin could have thrown all his forces on Kuroki and then turned upon Oku, but every Chinaman was a spy for the Japanese and a surprise was out of the question.

Kuroki would probably have withdrawn and Oku forced his way up the railroad. If Kuropatkin had thrown all his forces on Oku, Kuroki would have been a dangerous enemy in his rear.

PERSONNEL OF THE OPPOSING FORCES.

One is apt to overlook the effect of small size in warfare. It takes more bullets to hit a Japanese than a Russian. A



From London Illustrated News

THE ENGELHARDT 87-MM. Q. F. FIELD GUN



From London Illustrated News

AN INTERVAL OF ARTILLERY FIRE; CLEANING THE GUNS UNDER COVER

ravine that will hide a Russian's legs may hide a Japanese body.

The Japanese are nimble and quick. The Russians are slow, but with good training perhaps the best material for soldiers, next to the Americans, although in a very different manner.

The Japanese horses are small. They bought some large ones but found that their legs would not go around the horse's body and the harder they tried to hold on the less secure they became in their seats.

The small size of the men and horses controlled the weight and caliber of the field-guns and they have often been exposed to fire to which they could make no reply.

FIREARMS.

The small arms of the Russians and Japanese do not differ materially from those in general use in Europe and America.

The Japanese field-gun is lighter than the Russian and its effect is about the same as that of the Russian gun at 1000 or 2000 yards greater distance. The gun is mounted in the axle instead of on it and this makes it look like the "men whose heads do grow beneath their shoulders" whom Othello describes as allies of the anthropophagi. This gives it greater stability and lightness, but less command. For checking the recoil and returning the piece to battery, they use the recoil brake and wheel shoes instead of the old trail spade or the modern recoil cylinders. When the piece recoils, the rope winds around the nave and compresses the cup shaped springs of the brake. The average length of the recoil is half a meter. When the piece runs forward, it does not return to precisely its original position and has to be relaid after each shot. The breech mechanism requires two motions to open and close, and the powder and projectile are inserted separately.

The Russian field-gun is better than the Japanese in its ballistic qualities, but its recoil is taken up by a trail spade actuated by an india-rubber buffer. This deteriorates from old age, climate and oil.

The seacoast guns at Port Arthur were originally of the old Obuchoff type, and resemble the old Krupp guns. They are inaccurate and slow; the heaviest are 10 and 11 inch, and their penetration is about one-half that of modern guns of the same caliber. Then 10-inch guns with capped projectiles



From London Graphic

ARTIFICIAL COVER ERECTED BY THE JAPANESE FOR CONCEALING HOWITZER-BATTERY EMPLACEMENTS.

would penetrate the heaviest Japanese armor at 3000 or 4000 yards at normal impact only. The new Obuchoff guns are better. They are similar to the Schneider-Canet. As at Sebastopol many guns have been taken from the ships in the harbor and mounted on land. Some of the guns for the sea-coast and for the land front are mounted on Durlacher disappearing carriages. As the piece recoils and descends, it actuates the piston of a hydraulic cylinder which forces the liquid through pipes to other cylinders and compresses Belleville springs which return the piece into battery after it is loaded. Most of the modern guns mounted at Port Arthur are of 6-inch or 4.7-inch caliber and therefore useless against battleships at Japanese distances.

At the siege of Port Arthur the Japanese made use of sea-coast mortars of 28 centimeter or 11-inch caliber. They are mounted on a carriage which recoiled on the chassis and far inferior to our 12-inch mortars. The shells which were loaded with Shimose powder weighed about 500 pounds, but the rate of fire was only about one round in eight minutes instead less than one minute.

The field pieces used in the war must not be confounded with such quick-firing guns as the French, or as those with which the Americans and all the Europeans are now arming. The new gun takes up the recoil by a hydraulic cylinder and is brought forward by a pneumatic, or still better by a helicoidal steel spring. The gun moves back 50 or 60 inches on a carriage which remains absolutely still. These new guns can fire twenty rounds a minute; the Russian guns five or six rounds; and the Japanese four or five.

The Russians' tactics have been based upon their experience in 1877–8, but the influence of Dragomiroff and other conservative officers have kept them from drawing such inferences from it as we have drawn. The Japanese appear to have rigorously copied the Germans. They appear to have based their tactics on the war of 1870 and '71 and I think without making due allowance for the weapons they carried. They have, however, shown great skill in the use of field-artillery, especially in indirect fire and when no natural shelter was to be found they have improvised it by building screens heavy enough to afford protection against small arm and shrapnel fire.

TACTICAL FEATURES.

It has been asserted by many who ought to know better, that this war has proved the folly of the conclusions that were drawn in Europe from the war in South Africa and shown that if soldiers are animated by desperate bravery, reckless of death and insensible of pain, they will go forward in spite of appalling slaughter, and by a liberal use of the bayonet transfix their feeble adversaries who have depended upon their firearms for defense. We know very well that such was not the experience of our Civil War and we know that the Europeans could not benefit from our experience until it was repeated upon the other side of the Atlantic, regardless of latitude. A few years ago they were disposed to treat lightly any allusion to our views of fighting, still less would they admit that a gun ten times as efficient would do much more execution than the old guns.

A careful comparison of the numbers of killed and wounded with those in former wars shows that the proportions are less in comparison with the numbers engaged in the Asiatic than in the American War—although some of the Asiatics have been said to take pride in killing themselves. A careful scrutiny of the battles of this war shows that they accomplished more after they learned that non-existence was incompatible with the efficiency of a soldier.

It will appear that in the battle of the Yalu the Russian line was brought under a heavy fire of artillery from front and flank before the Japanese infantry approached in front, and that this line, as soon as it came under heavy fire, withdrew to the cover of the river bank and followed up the ravines to unprotected points in the enemy's line.

At the battle of Nanshan, the frontal attack accomplished nothing until the position was turned and the Russian defenses brought under fire from front flank and rear.

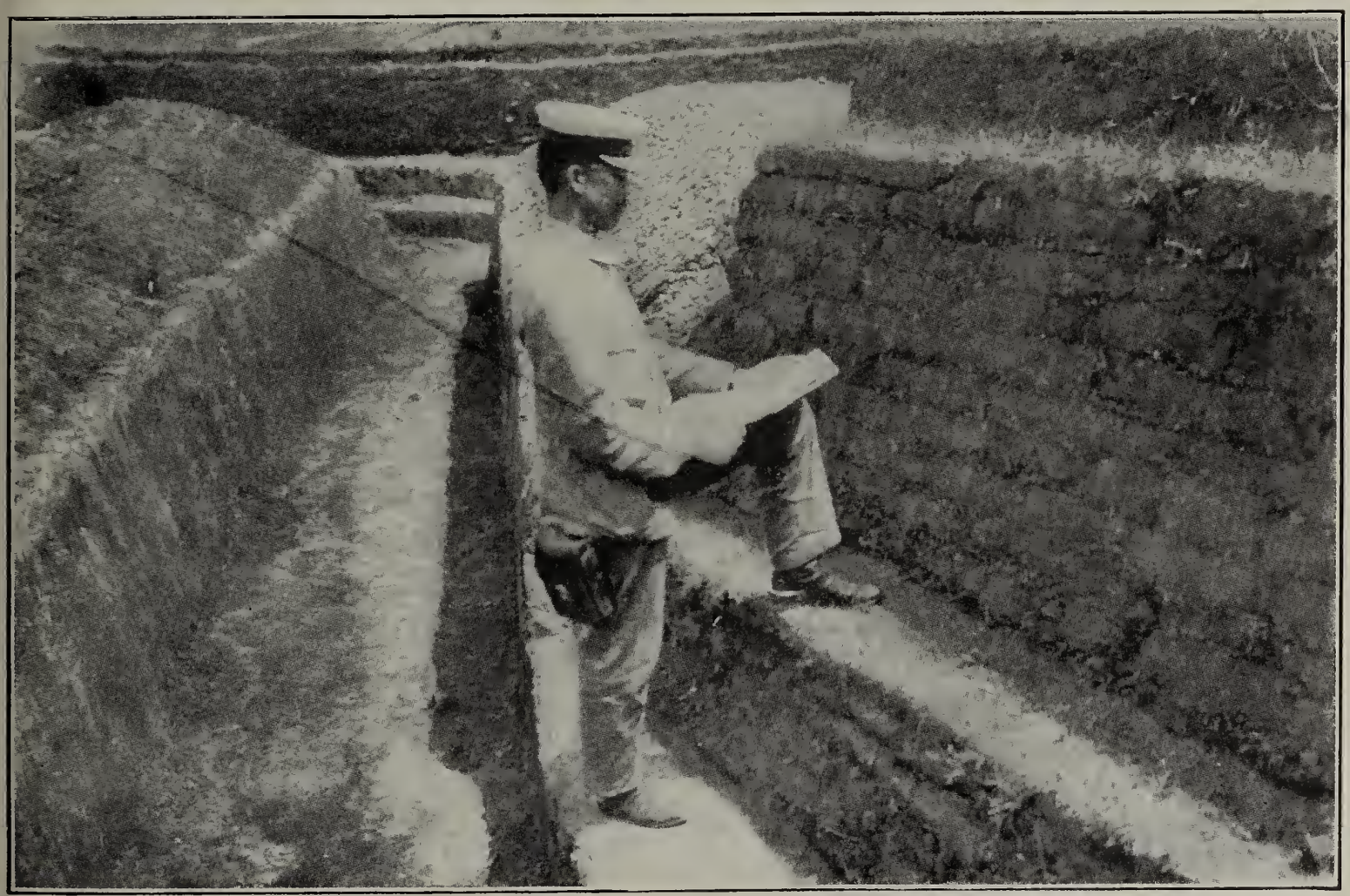
At Liao Yang and elsewhere the Japanese made repeated frontal attacks, losing heavily and accomplishing little, until they turned the flank.

Both sides have made extensive use of intrenchments, but the trenches have been deep enough to enable the men to fire standing and not lying down as formerly. Trenches of the old form would soon be plowed up and leveled off by the rain of high explosive shells and the shrapnel would search out any



The London Illustrated News

THE JAPANESE ADVANCING BEHIND BAMBOO SCREENS



The London Illustrated News

THE INTERPRETER; THE MEDIUM BETWEEN CORRESPONDENTS AND THE GENERAL STAFF; CAPT. OKADA PHOTOGRAPHED IN THE TRENCHES

cover they could afford. The Japanese displayed much ingenuity in the use of screens.

Extensive use has been made of wire entanglements, *trous de loup*, etc., as in our Civil War.

The modern rifles, if properly directed, will enable a line of infantry at three or four yards intervals to keep off an indefinite number of adversaries if it is protected by intrenchments and if the ground in front is all exposed to its fire. The bullet will penetrate several feet of wood, but it will not go through the side of a hill or dense forest. The method of attack, developed in the last great battles, is what was predicted by those who had studied the problem with greatest care, viz.: the artillery with its quick-firing guns and especially with howitzers if available keeps up a continued fire upon the position to be attacked, at first with high explosive shells and then with shrapnel. Then the infantry advances, preferably by night or in a fog, and takes up an advanced position, digging itself into the ground and perhaps waiting all day to make the next advance by night, and so working along until the enemy's strength or ammunition is exhausted.

The fact that a thin line can hold a stronger one in check makes it desirable and possible to make a bolder move than formerly to outflank an enemy, and in South Africa both sides kept extending until a small army covered a front of twenty miles, then as predicted, it became possible to reverse the tactics and break through the center as was demonstrated in the last campaign in Africa. The plan of this battle was similar to that of Austerlitz, but the yard stick was many times as long. But as a line is longer it must also be thicker, for a line can be broken by constant pounding, and if the wings must travel twenty miles to reinforce the center, the center must be stronger than if they only had to travel two miles.

In the present war the lines have seldom been too much extended, and where the attacks on the center have been successful it has been due to openings in the line and to local causes. This was notably the case at Liao Yang and at the great battle of Moukden.

Both on the march and in the great battles by land all the operations were conducted by telegraph and telephone from maps showing the positions of the troops, and so far as the leaders were concerned they were simply kriegsspiels with living men.

NAVAL AND SEACOAST WARFARE.

The Japanese Navy has taken the navies of England and America as its models. The admiral who fired the first shot learned the art of war at Annapolis and the Japanese Naval Staff has made a thorough study of the art.

In this respect the Russian Navy has been fearfully deficient. The Russian ships have been built on the most approved models, but the crews have not even been perfected in the elementary drills, much less have they become familiar with those exercises on the map and on the water that are making warfare a second nature to the Anglo-Saxon navies. Russia, like Macedon, has spent hundreds of years in fighting her way to the sea and has not yet learned how to fight upon it.

Some of her naval officers, however, are as well advanced in their profession as any in the world, and the lamented Admiral Makharoff was the recognized authority in Europe and America on naval battle tactics and specially on torpedo warfare.

The most striking and dramatic feature of the siege of Port Arthur, is the fact that before Russia imagined that there would be a real war, three of her big ships had been put out of action for the time being by torpedo-boats, and on the following day three more vessels were injured by the long range fire of the Japanese.

Until quite recently torpedo-boat warfare had been discredited by naval experts. The effect of one night's work was to suggest to some minds the necessity of abolishing battleships, and then the pendulum of public opinion swung to the other side, and now many officers of the army and navy believe that torpedoes are ineffectual. The work they have done would justify their retention but they can do much more. Their advocates have recently been too sanguine and not availed themselves of all available means to increase their speed and direct their flight. The explosion of the charge has been imperfect. The remedy is probably at hand, and I believe that automobile torpedoes will play an important part in the wars of the near future. They have played the leading if not the decisive part in the present war.

The long range gun has proved to be the master weapon for purely naval purposes. The ranges in the sea fights varied from over 8000 to 2500 yards, but the greatest work was done at long range. This has been anticipated by advanced think-

ers, but in the naval battle of Santiago the effective work was done by the rapid-fire guns of medium caliber, and this gave rise, both in Europe and America, to the general belief that these should be the main dependence of the navy and of seacoast fortifications.

The late Admiral Makharoff was inclined to advocate this view, although he has been the most eminent in the introduction of the capped projectile for piercing armor and the great authority on torpedo warfare. This opinion about rapid-fire guns was shared by eminent artillerists of both services and on both sides of the water, and there was at one time great danger that we should have no more heavy guns or mortars. Fortunately, on our seacoast, we mounted the heavy guns first, because it took longer to mount them, and we have always recognized the necessity of guns of small and medium caliber against torpedo-boats and other small craft, and especially against such devices as an enterprising and powerful navy would use in removing our submarine mines.

It is interesting to note in this connection that the Russian fleet was finally destroyed by the Japanese 11-inch mortars, similar but far inferior to our 12-inch. The Austrians have a 9½-inch mortar which they transport on three carriages, and which is mounted and fired in thirty minutes. A similar mortar, but of a little greater power, would enable us to make hundreds of our little harbors untenable as long as we hold the shores with our land forces.

The Japanese and Russian Navies were so nearly equal that the loss of a few vessels might turn the balance. To this and other causes must be attributed the fact that so little has been done in the way of countermining.

Although it is not to be supposed that neither party has made use of electrically-controlled mines, yet most of the work has been done to friend and foe by the automatic self-regulating mines. These are dropped overboard from a hole in the stern of a vessel like the *Yenisei*. The mooring line is clamped automatically at the proper depth and the explosion made by contact. An officer of the Italian Navy has won quite a reputation by his improvements in this style of mines and a few years ago they were quite popular in Europe. The Russians have blown up so many of their own vessels that they will perhaps make less use of such mines hereafter.

Although we have been among the first to develop a good

system of electrically-controlled mines, and now hold that they are among the first requisites of a perfect defense, we consider them as an obstacle to detain vessels under fire of our guns and not as impassable if left to themselves. Automatic mines can be automatically exploded, and controlled mines can be removed by countermining in a fog by an enemy that is strong enough to command the water.

The necessity for more scout boats is made apparent by every step of the operations.

SIEGE OPERATIONS.

Port Arthur, like Sebastopol, was not a regular permanent fortress, but simply a harbor defended by an old Chinese wall and many earthworks well-stocked with old guns and reinforced by modern guns taken from the fleet.

For fifteen or twenty miles the country was fortified by earthworks or masonry works of the old form. Nothing like the girdles of detached forts that surround the cities of Europe. The high hills look strong but their slopes are rugged and cover dead spaces hard to reach from the forts that surmount them.

The forts in modern Europe are also defended by steel cupolas which may be concealed from distant fire and are imbedded in vast masses of concrete. There has been no opportunity in this war to test the utility of these devices, and it must be remembered that the heavy 11-inch mortars cannot be transported by land as easily as they were by sea.

In attacking a fortress armed with modern guns it has been evident since 1885 that the old method of sapping was utterly impracticable. One school of officers advocated the return to the method of a series of bombardments followed by rushes to places of shelter, and finally by assault.

The loss of 25,000 men by the Japanese in two or three days is one of the penalties they have paid for their fidelity to the German school of General von Sauer. Some of us, however, predicted several years ago that the most promising method of attack was in approaches resembling the old parallels and boyaux in plan, but very different in cross sections. The Japanese were finally driven to precisely this form which was intermediate between a sap and a mine.

The siege operations are thus described by Richard Barry, an eye-witness:

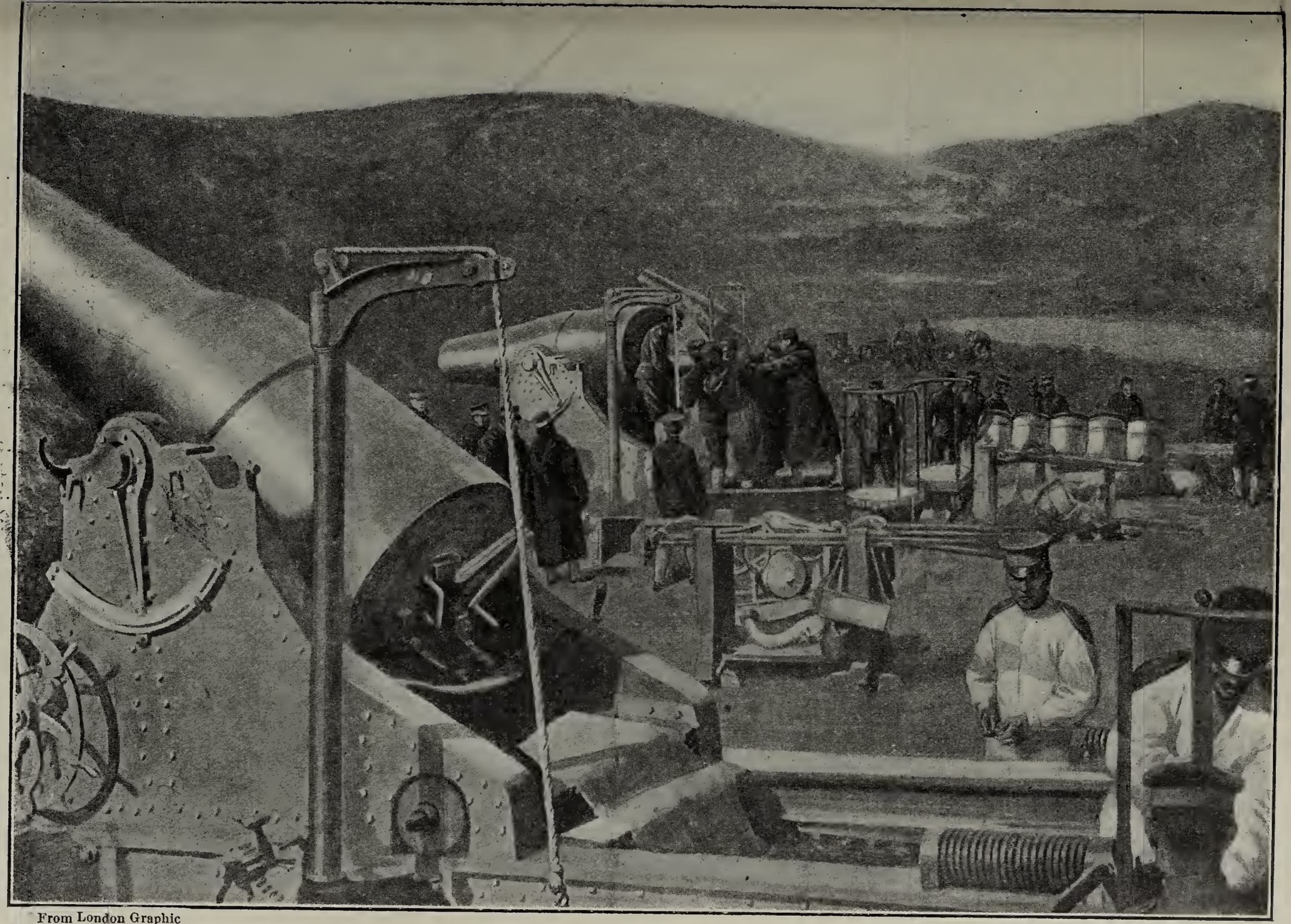
"As soon as the investment was complete, the Japanese

erected hidden batteries in various carefully-selected positions until they had no less than 300 guns trained against the city.

"All the furious assaults that failed so disastrously were preceded by bombardments the like of which had never been witnessed in the history of the world. These batteries consisted of regular siege guns of 5-inches caliber, a large number of naval guns of 4.7-inch and 6-inch caliber, and the regular field ordnance of the three divisions of the two independent brigades of the third imperial army. By far the most powerful pieces used in the bombardment were the powerful 11-inch mortars which were mounted in batteries from two to four in various positions behind the ranges of hills which effectually screened the Japanese from Russian observation.

"For the approaches the first operation was to cut a deep trench, not less than six feet in depth and a dozen or more in width, roughly parallel with the lines of the forts, and in a distance of about 1000 yards therefrom. From this trench three lines of zigzag trenches were dug in the direction of the principal forts of Erlung, Keekwan and Panlung. These trenches were about six feet deep (deep enough to hide the sappers from view) and eight feet wide (wide enough to allow the troops to march to the assault four abreast). The zigzag consisted of an alternate approach and parallel. The angle of the diagonal approaches were so laid with references to the enemy's forts, that it could neither be seen nor reached by shell fire. The digging was done chiefly at night, and the soil was carried back through the excavated trenches in gabions and on stretchers, and dumped out of sight of the enemy. As the parallels were advanced across the valley or level spaces they were roofed at intervals with planks covered with soil and grass, so that as the Russians looked out toward the ravine in which the army was supposed to be encamped there was nothing to indicate that the enemy was cutting a series of covered roadways right up to the base of the forts themselves.

"Of course, in many cases, the trenches were located, and desperate night sorties were made in the endeavor to break up the work. When the foot of the fortified slopes was reached a second great parallel extending around the whole face of the fortified eastern front was cut. This latter for the purpose of assembling troops for the final dash upon the forts. From this parallel the Japanese cut tunnels straight through the hills



From London Graphic

BREAKING DOWN THE LAST DEFENSES; SIEGE GUNS BEFORE PORT ARTHUR

This battery, the photograph of which was taken during the bombardment of Oct. 28, was situated 2400 yards from nearest Russian batteries. The heaviest gun is shown elevated ready to be fired while the second is being loaded.

until they formed themselves immediately below the massive parapets of such forts as they wished to reach."

From this point the mining operations began, similar in their general features to those as Sebastopol and subsequent sieges.

Thus was brought into prominence many other well-known devices.

Among others the steel shields for protection against musketry and shrapnel—the hyposcope or broken tube spy-glass to look over a parapet without exposure. This was used on 203 Metre Hill to direct the fire of the 11-inch mortars against the ships. Very extensive use was made also of land mines and stone fougasses.

Although most of the methods and devices that have been developed in this war have long been known to military men, they have not all been put into practice on so extensive a scale, nor have they all been advocated by any but the most advanced thinkers who have perhaps been thought somewhat visionary. Nor have these methods been employed by the Russians and Japanese because they were more advanced than the other great powers, but because they began with the conventional methods and improved upon them from the result of experience. The Japanese appear to have followed the Germans almost to the letter, and the German school is still, or has been until the last few years, weighted down by the experience or authority of the veterans of 1870 and '71.

The war of to-day is nearer that of the German bookstores of the past fifteen years than that of the German, Russian or Japanese Armies of a year ago.

The great lesson of this war is preparation. The Japanese had been rehearsing this war in all its details for the past ten years, as a war had never been rehearsed before. They had accumulated everything that could be required and stored it in spots from which it could be shipped to its destination on the hour and minute of the first hostilities.

The Russians did not expect and did not want a war, and all their energies for many years had been devoted to the construction of the Siberian railroad to an open harbor on the Pacific. This railroad has surpassed the expectations of their adversaries in its capacity for the transport of troop and ammunition. Correspondents who have just passed over it, describe it as well-constructed and maintained and capable of trans-

porting nearly a thousand men a day besides all the supplies of the great army. If they have lost Port Arthur, where will they find the open harbor? Not to the north, for it is colder. What then will be the final terminus of the Siberian railway?

Besides the general lesson of military preparation, this war has shown the necessity for carrying the instruction of armies to a higher point than it can be carried on the parade ground.

[TO BE CONTINUED.]



ACCOUNTABILITY FOR PUBLIC FUNDS AND PROPERTY.*

By Colonel H. O. S. HEISTAND, Military Secretary, United States Army.

THE departments and bureaux of the Federal Government disburse vast sums of money and possess great quantities of movable property, such as fuel and forage, office furniture, stationery, means of transportation, tools, arms etc., and the business connected therewith is entrusted to officers and agents who are held to a strict accountability for property and expenditures of money.

Accountable officers are from time to time required to render formal statements of their accountability, accompanied by vouchers which give full details of the transactions. These formal statements are called "Accounts Current" when they pertain to money accounts, and "Returns" when they pertain to property. The object of the "Accounts Current" and "Returns" are two-fold; one to insure integrity in the conduct of the public business by giving the auditors opportunity to critically scrutinize all transactions, the other to keep the departments advised of the amount and whereabouts of funds and property on hand and available for expenditure or use.

The system at present in use, while not complicated, involves more time and clerical work than is necessary, and frequently in the military service under conditions of great difficulty and inconvenience.

It is believed that the same results might be secured, in the War Department at least, and eliminate a large part of the clerical work, while the greater portion of the remainder would be done in comfortable offices and thereby relieve officers in field and camp from one of their most exacting duties, and give them the time now spent in paper work to look after the practical work of assembling and distributing supplies.

The method now followed necessitates the retention of vouchers for periods varying from one month to six months, at the end of which they are abstracted, packed up and sent in a

*This paper is based upon a Memorandum on the subject, submitted to the War Department in 1904, and is published by authority of the Chief of Staff.

bunch with a summary of the business for the period covered to the bureau to which they pertain; this summary is the "Account Current" or "Return" above referred to. The care of all the papers at posts and in the field for such long periods is a serious consideration, to say nothing of preparing the abstracts. Papers pertaining to property and money accounts are so important to the accountable officer that he is inclined to leave rations and ammunition behind rather than risk separation from documents, the loss of which would affect him financially. The periodical arrival of returns and vouchers at the receiving office causes great congestion which results in long delays in examination—often a period of months elapsing before the accountable officer receives notification of the result, and any error is likely to be carried on through a series of returns. It is believed that both the "Account Current" and the "Property Return" might be dispensed with, and the periodical congestion of the auditing divisions relieved by allowing officers to mail their vouchers for money and property to the proper bureau as soon as completed, keeping a duplicate for their own protection. The vouchers, too, are capable of great simplification.

The operation of such a system may be illustrated by a single example. Congress makes an appropriation, say, of $1,000,000 for the expense of the Quartermaster's Department of the army, and the Treasury Department sets aside that amount as available. The Secretary of War draws a warrant for $100,000 and places it to the credit of the Quartermaster-General, who is notified and charged on the books of the Treasury Department with the amount. The Quartermaster-General transfers $10,000 cash to Colonel Smith and receives receipts in duplicate from that officer; he keeps one receipt and immediately mails the other to the Treasury, where, upon its receipt, he is credited with $10,000, leaving him accountable for $90,000, and his own cash-book shows the same. Colonel Smith, under proper authority, purchases 1000 bunks at $10 each and mails one copy of the purchase voucher and receipt with authority, etc., attached, for the purchase price ($10,000) to the Quartermaster-General, and keeps a copy. When the paper is received at the office of the Quartermaster-General, where it is examined as now, and then sent to the Treasury, where Colonel Smith's cash account is credited with $10,000 and he is charged on his property account with 1000 bunks. Colonel Smith transfers

100 bunks to Captain Jones and takes receipts in duplicate, retains one and immediately mails the other, which, when received by the Quartermaster-General and Treasury, operates to give him credit on the books for 100 bunks and leaves him accountable for 900. Lieutenant Doe asks Captain Jones for a bunk to use in his quarters; if he gets it he gives Captain Jones a receipt in duplicate, one copy of which is retained by Captain Jones, who mails the other and gets credit for one bunk and remains charged with ninety-nine, and Lieutenant Doe is charged with one and the memorandum receipt now so much used could cease to exist. This would leave the responsible agent always accountable to the Government for the property in his possession. If desired, one officer might be accountable for all the property of any supply department at a station, but experience teaches the writer that better results are secured by making the individual accountable for the property in his possession. The same system could apply to all departments and to money vouchers. Under the present system all of the above papers have to be made out by accountable officers and examined by the auditors. The accountable officer has the additional work of the abstracting and adding long columns of figures and the auditors the examination and verification of the same, while the work comes spasmodically instead of a steady flow as would be the case under the system outlined above. Strictness of accountability would not be sacrificed and much greater promptness secured by the proposed system.

At stated periods, if desired, officers could make out a statement of the funds and stores on hand and keep the Department fully advised in that regard, and if the officer's account and that of the Treasury did not agree, detailed statements of the items in error could be called for and furnished. Every officer would keep a properly arranged debit and credit blotter, which he would, for this own protection, be obliged to keep posted to date, showing at a glance the exact amount of money or quantity of every article on hand at any moment. A page of the same might be as follows:

BUNKS.

Date 1904.	No. of Voucher.	Nature of Transaction.	Dr.	Cr.	On hand to be accounted for.
Jan. 11	121	Purchased.....	1000		1000
Jan. 15	124	Received by Transfer.....	16	.....	1016
Jan. 16	190	Transfer to Capt. Miller....	.....	100	916
Feb. 4	221	Transfer to Lieut. Ives.....	.....	21	895
Feb. 11	229	Received by Transfer.....	96	.....	991
Mar. 3	321	Condemned and Destroyed.	.....	226	765
Mar. 17	426	Transfer to successor.....	.....	765	....
.....	———	Total.....	1112	1112	None.

Similar pages could be given to each article. A good substitute for a book for the purpose would be the "Shannon" file or loose cards arranged alphabetically in a file box. A reference to the voucher cited in every transaction would give all the data pertaining thereto and the authority for the same. By the insertion of loose leaves or cards space could be added as required and names of added articles introduced into the account in alphabetical place. The same sort of book or file at the Quartermaster-General's office and the Treasury would be a running return or account, upon which vouchers would be posted as soon as received and the officer's accountability always up to date and could be completely closed in a short space of time. In case of the death of an officer his successor could begin his duties at once with a complete statement of accountability.

It is believed the proposed system could be made to discontinue the pernicious tendency to be "ahead" on property

Upon receipt of a voucher at the bureau office of the Treasury, it could be examined and entered at once and the officer notified, if necessary, by postal card, all printed except the number of the voucher, to be inserted, and the War Department would have much earlier and more reliable information concerning supplies. Issues could be continued without interruptions or inconvenience when property is being inventoried or transferred.

An officer relieved from duty could close his account and make up invoice of his accountability in a very short period of time, and the funds and property accountability would be ready for instant inspection by an inspector-general without the necessity of preparing a long, special statement for verifi-

cation or making out a return to show accountability for property.

In time of peace the Subsistence Department, which keeps a daily account with individuals, might make up monthly bills as vouchers—the main idea of the proposed system being to do away with the account current and return attended by the periodical influx of papers and the necessity for holding vouchers for long periods and to have as much as possible of the clerical work done where the best facility exists.

Money vouchers as now prepared are bulky, cumbersome, and with American commercial methods are annoying to business firms. In preparing vouchers for the expenditure of money it is now necessary to prepare vouchers in duplicate, attach thereto the ordinary receipted bills of commerce, and have the vouchers signed by the payee. If the transaction be with a business firm the vouchers must be signed with the firm name and then by one of the individual members of the firm, who must state that he is such member, or the vouchers must be signed with the firm name and in addition by someone authorized to receipt for money due the firm, and evidence of that authority must accompany the voucher.

The nearer the Government approaches commercial methods in the conduct of its business, the more practical and economical will it become, and while none of the precautions against fraud need be abandoned or weakened, much of the vexation and delay now complained of will be avoided.

The Government and the disbursing officer would be fully protected if accounts were paid by check, taking the receipted, itemized bill in duplicate, attaching the authority for the expenditure and noting thereon the necessary data to identify the check given in payment. Such a paper forwarded with a statement to show the disposition of the property purchased would be as complete a voucher as the present cumbrous paper to which signature is in many cases so difficult to obtain, which causes such delay and inconvenience in transacting Government business and about which commercial houses frequently complain. The canceled check when received at the Treasury could be compared with the voucher to which it referred, for the complete protection of the Government, and the Treasury official who pays the check would satisfy himself that he was paying the proper person.

One objection to the method of property accountability

herein briefly outlined is the fact that some officers have as many as four thousand articles or more on their returns and would require that number of pages or cards in their files, but the objection is not a great one, as it always requires space to carry on a large business, and a little additional space, if indeed it would be necessary, could well be sacrificed for the advantages secured. Another objection would be the first cost of providing files, though it would not be great and would be offset by the saving in clerk hire. There may be objections and difficulties too great to overcome, but an experience of about twelve years' service in the Quartermaster and Subsistence Departments suggests none. Should the greatest objection arise from conservatism, it is to be borne in mind that tradition must occasionally be torn up by the roots to make way for progress; if it were not so we would yet be deciphering manuscripts by candle-light and defending our country with bows and arrows. If the discussion, which it is hoped will follow this paper, leads to the relief of the fighting force from a portion of the burdens of paper work, it will have served its purpose.

ADDITIONAL.

Since the above paper was prepared the original memorandum upon which it is based has been received back from the War Department with the following endorsements by the chiefs of the various staff corps:

SECOND INDORSEMENT.

WAR DEPARTMENT,
THE MILITARY SECRETARY'S OFFICE,

WASHINGTON, December 27, 1904.

Respectfully referred, by direction of the Chief of Staff, to the Inspector-General of the Army, for remark.

HENRY P. MCCAIN,
Assistant Adjutant-General.

THIRD INDORSEMENT.

WAR DEPARTMENT,
OFFICE OF THE INSPECTOR-GENERAL,

WASHINGTON, January 5, 1905.

Respectfully returned to the Military Secretary. As the within proposed methods of rendering accounts do not accord with the statutory law relating thereto (Sec. 3622, R. S.), which requires dis-

bursing officers to render monthly accounts with the necessary vouchers, legislative action would be necessary to effect the change.

It is recommended that Colonel Heistand be permitted to offer, for publication, his views as herein presented.

S. C. Mills,
Acting Inspector-General.

Fourth Indorsement.

War Department,
The Military Secretary's Office,
Washington, January 6, 1905.

Respectfully referred, by direction of the Chief of Staff, to the Quartermaster-General, the Commissary-General, the Surgeon-General, the Chief of Engineers, the Chief of Ordnance and the Chief Signal Officer of the army, for comment.

Henry P. McCain,
Assistant Adjutant-General.

Fifth Indorsement.

War Department,
Office of the Quartermaster-General,
Washington, January 12, 1905.

Respectfully transmitted to the Commissary-General. After careful consideration it is not believed that this scheme is practicable or that it is desired to make any change in the present system of money and property accountability on the lines suggested herein.

C. F. Humphrey,
Quartermaster-General.

Sixth Indorsement.

War Department,
Office Commissary-General,
Washington, January 18, 1905.

Respectfully returned to The Military Secretary, War Department (through the Surgeon-General).

I am not wedded to any particular system of accountability, but do not favor changing present methods except for good reasons.

Leaving out of the question the legal aspect of the case, and judging the proposed plan solely on its merits, I am of the opinion, after the fullest consideration, that its adoption would not be in the interest of economy, simplicity or the effective dispatch of public business.

The system of accountability in operation at the present time is the result of years of experience and the best efforts of trained accountants and administrators, and it is being changed from time to time to meet necessities as they arise. It is simple and satisfactory, and seems to answer in every way the purposes for which intended. For these reasons no change is recommended; but Colonel Heistand deserves credit for his effort to improve the system.

The Subsistence Department welcomes suggestions and candid criticism at all times.

J. F. Weston,
Commissary-General.

SEVENTH INDORSEMENT.

WAR DEPARTMENT,
OFFICE OF THE SURGEON-GENERAL,
January 23, 1905.

Respectfully returned to The Military Secretary, through the Chief of Engineers, United States Army, concurring in the views of the Quartermaster-General and the Commissary-General.

R. W. O'REILLY,
Surgeon-General, United States Army.

EIGHTH INDORSEMENT.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
WASHINGTON, January 27, 1905.

1. Respectfully returned to The Military Secretary, through the Chief of Ordnance.

2. The proposed system of accountability is not believed to be practicable.

A. MACKENZIE,
Brig.-Gen., Chief of Engineers, United States Army.

NINTH INDORSEMENT.

OFFICE OF THE CHIEF OF ORDNANCE,
WASHINGTON, January 13, 1905.

1. Respectfully returned to The Military Secretary, through the Chief Signal Officer.

2. The proposed method of rendering money and property returns, if authorized by law, would amount practically to having all the clerical work involved, except making out and executing the individual vouchers, performed in the various bureaux of the War Department, and it is a conservative estimate that such a course would necessitate at least quadrupling the number of clerks engaged on that work at the present time. It is obvious that when a certain amount of clerical work is distributed among a great many persons—in this case the 1st sergeants and quartermaster's sergeants of the various troops and companies—it will require only a limited amount of their time, provided they are not otherwise occupied, to do the work which, if transferred to a central office would demand a largely increased clerical force, although the amount of clerical work would probably be less.

3. In regard to the money accounts of this office, it is difficult to see wherein any saving could be effected. The necessary vouchers would have to be made out in any case, and the abstracts required to accompany the papers are merely summaries of the amounts appearing under the different vouchers and appropriations, while the account current is simply a consolidation of the abstracts with the account for the preceding month. Even for his own information a disbursing officer would find it necessary to abstract his vouchers in order that he might know at any time how he stood with respect to the amount of money on hand under the different appropriations.

4. In regard to property accountability it is the purpose of this Department to simplify this branch of its accounts so that the

property return itself will be a record of all outgoing and incoming transactions, for which the entries can be made by the officers concerned as they occur. When the number of lines on such a property return is in excess of the number of lines available it will be necessary to resort to abstracts, but for this purpose there are only two, viz.: one for outgoing property and one for incoming property, and in using such abstracts in connection with his retained accounts an officer has merely to subtract the quantity of any item as shown by the outgoing abstract from the quantity as shown by the incoming abstract. The difference will be the quantity on hand. For an officer in the field this information is always essential, and the keeping of such accounts is merely a duplicate of what he is required to send to the Ordnance Office.

WILLIAM CROZIER,
Brig.-Gen., Chief of Ordnance.

TENTH INDORSEMENT.

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,

WASHINGTON, February 8, 1905.

Respectfully returned to the Military Secretary. After careful consideration it is not believed that the within scheme is sufficiently practical to commend its substitution for the present system of money and property accountability.

A. W. GREELY,
Brig.-Gen., Chief Signal Officer.

ELEVENTH ENDORSEMENT.

To the Chief of Staff, M. S. O., February 10, 1905.

TWELFTH INDORSEMENT.

WAR DEPARTMENT,
THE MILITARY SECRETARY'S OFFICE,

WASHINGTON, February 15, 1905.

Respectfully returned, through Headquarters Atlantic Division, to Colonel Henry O. S. Heistand, Assistant Adjutant-General.

In connection with office letter of December 27th last, on this subject, authority is granted by the Chief of Staff to Colonel Heistand to publish his essay if he desires to do so, and at the same time to publish the comments of the chiefs of bureaux of the War Department,

By direction of the Chief of Staff:

HENRY P. MCCAIN,
Asst. Adjutant-General.

The provision of law cited by the Inspector-General was taken into consideration and discussed with officers before the memorandum was submitted to the Department, and legislative action contemplated in case it was deemed advisable to adopt the system proposed.

The Quartermaster-General, the Chief of Engineers and the Chief Signal Officer dismiss the subject with an expression of the belief that the system proposed is not practicable. The views of such distinguished officers are worthy of great consideration, but without the reasons upon which those views are based they do not weaken the reasons set forth in support of the change.

The views of the Commissary-General and their adoption by the Surgeon-General set forth reasons for objecting to the proposed system, as follows:

1st.—It would not be in the interest of economy.
2d.—It would not be in the interest of simplicity.
3d.—It would not be in the interest of effective dispatch of public business.

If not in the interest of economy, it is claimed that the proposed method would be at least as economical as the present method, since it contemplates that much of the work now performed by clerks at army posts and remote stations in the field would be transferred to the central office, and as it is proposed to reduce the number of papers and simplify others the fear of anticipated increase in clerical force, which embodies the only blow to economy, does not appear well founded. Furthermore, economy is not so much to be measured in dollars and cents as it is in the efficiency of the fighting force, which should not be impaired by excessive and unnecessary clerical work.

As to simplicity, it seems clear that the proposed system is a step forward, since as stated above it eliminates some papers now required and replaces others by forms less complicated. It also reduces the probability of mistakes due to the common errors of addition and subtraction by putting the work in the hands of experts skilled in account keeping by long training and practice, instead of entrusting such work to the available enlisted men who may happen to be temporarily at hand at posts or in the field.

The Commissary-General says:

"The system of accountability in operation at the present time is the result of years of experience and the best efforts of trained accountants and administrators, and it is being changed from time to time to meet necessities as they arise. It is simple and satisfactory, and seems to answer in every way the purpose for which intended. For these reasons no change is recommended."

The system in operation at present seems more like the accumulation of individual exactions of those who do not realize

the burdens upon the fighting force than the "result of experience." Surely it is not the result of the experience of those officers who march all day, make their issues after dark, and work far into the night with a smoky lantern on the tail-board of a wagon to prepare their returns. That the system now in operation is even simple is not admitted; that it is satisfactory to any but the administrative and clerical force of the departments in Washington is not believed; that it is not satisfactory to officers in garrison and the field is evidenced by the constant complaints heard against it in every garrison, and especially by those who are called upon to do field duty.

If a system requiring days, and even weeks, to close a return and effect a transfer of accountability instead of being in shape to effect the same in a few hours, or which requires waiting for months to ascertain the status of a voucher in the hands of the auditor instead of receiving such notification by return mail, is in the interest of "effective dispatch of public business," then the phrase holds a meaning which the writer fails to comprehend.

The object of the proposed system could not be better stated than it is by the Chief of Ordinance when he says:

> "The proposed method of rendering money and property returns, if authorized by law, would amount practically to having all the clerical work involved, except making out and executing the individual vouchers, performed in the various bureaus of the War Department;"

but it is impossible to conceive upon what he bases the opinion that,

> "It is a conservative estimate that such a course would necessitate at least quadrupling the number of clerks engaged on that work at the present time."

It is not clear how the number of clerks would be increased. The assertion of the Chief of Ordnance arises probably from the fact that he fails to appreciate that sergeants and privates of the line are now doing clerical work which could be performed in Washington. As a matter of fact, a fewer number of experienced clerks in the War Department would replace the clerk sergeants, privates, and, often, the clerk officers, in the work they are now performing at posts and in the field where they might better be charged with the care and economical use of property and funds and not engaged in writing about them.

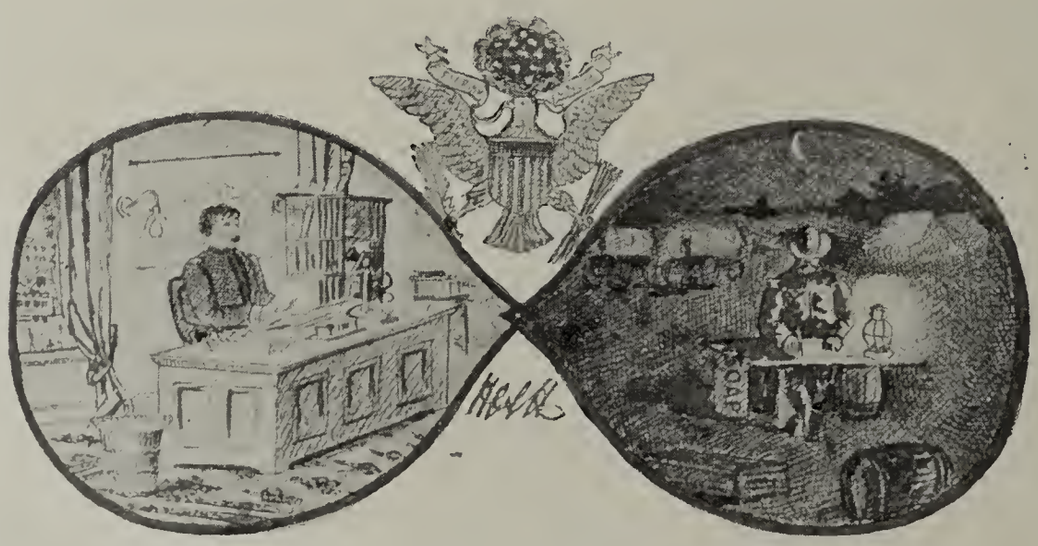
The questions arise whether a voucher immediately after its receipt at the department requires four times as long, or four clerks instead of one, to examine, note and acknowledge it as it does to perform the same operation with the same voucher one month or six months after it has been received; and whether if, under the proposed method, "the amount of clerical work would probably be less," it would require a greater force to do it in one place where the best facilities exist than to do a greater amount of work in another place where such facilities are wanting. It is admitted that if a given amount of work can be distributed it will only require a portion of the time of first sergeants, quartermaster-sergeants of companies, etc., to do it, "provided they are not otherwise occupied." That is just the point—they are, or should be, otherwise employed, but the fact is that when papers affecting the pockets of those men or of the officers they serve are required by the War Department those papers will be prepared regardless of the demands upon time by other duties and regardless of their relative necessity to efficiency, and those very men are often engaged in making vouchers to cover damages to and losses of property and abnormal issues which would not have occurred if time permitted the property to be properly cared for and economically used. The shocking losses sustained by the Government through the loss of or damage to public property, it is believed, could be materially reduced if the time of the accountable officers and their assistants could be spent in caring for the property instead of being caged in their offices preparing returns which by the time they are completed are so out of date as to give the department or even the officer who made them but little information of immediate value.

It seems proper in this connection, even if somewhat in the form of a digression from the main subject, to point out that the number of clerks in the War Department could be materially reduced and much time in the transaction of business saved by dispensing with the record feature of all the bureaux and substituting therefor a central office of record where all papers would be indexed and recorded and to which all officers on duty at the War Department would have the same access. Under the present system papers are frequently indexed and fully recorded in half a dozen or more bureaux, entailing a great and unneccessary amount of work and causing annoying and aggravating delays in action

In regard to remarks under paragraphs 3 and 4 of the views of the Chief of Ordnance, that he "cannot see how the change in the method of money accountability will effect any saving in his office," it is proper, even with a repetition, to state again that the object of the proposed system of accountability is not to effect a saving of work in the central office, but to save it for officers in garrison and field; surely it would be accomplished by relieving them of the care of vouchers for long periods and making out papers, such as abstracts in duplicate, which are useless in the case of money accounts when the cash-book shows after every entry the exact state of the accounts under the various appropriations.

In regard to the property returns, why require any return, with or without abstracts, when the Department can and would be fully advised upon receipt of the original vouchers and a pocket memorandum of the property transactions would answer every purpose of subordinates in the field. The necessity for carrying about vouchers, returns, and the numerous other blank forms now necessary would be avoided, as well as the attention and care they require and the worry they entail on those who need all the rest which the time snatched from studying, reciting, drilling, marching and fighting will permit.

The writer's plea is for the line and for the fighting force, which receives its supplies from the staff, and the return therefor should be the greatest measure of efficiency and fighting form. The field force does the fighting; the office force should do the writing.





AMMUNITION TO THE FIRING LINE.

A MEET IN THE PHILIPPINES: A RATIONAL PLAN OF ATHLETIC TRAINING.

By Brigadier-General W. H. CARTER, U. S. Army.

THE army was well satisfied with itself as a trained and highly capable fighting machine at the outbreak of the war with Spain. Assembled from widely scattered stations, regiments were brought together for the first time in years. Brigades, divisions and corps were hastily organized, and then came the sudden call for troops from Santiago. Marched aboard an indifferent lot of improvised transports, landed through the surf upon an open coast in the presence of a hostile force greater in numbers and fully as well armed, the small Regular Army, aided by a few selected regiments of volunteers, proceeded to break the backbone of armed resistance in a brief campaign of less than one month's duration.

What was it that enabled the army to do this? Of esprit de corps there was abundance and a better lot of officers of all grades it would be difficult to assemble. The consensus of

opinion of the most observant officers and men of the army, however, credits success to the system which had been gradually evolved during the few years prior to the war with Spain and which had for its object the development of an athletic body of highly trained rifle shots. This system aimed to secure its results in war by putting every man on the firing line in physical condition to run from cover to cover without becoming so winded as to be unable to shoot straight. That the system fully justified itself there is no question and under similar conditions the same results could be obtained again.

The difficulty in the army now is that conditions have become altogether changed and results which came naturally and easily before 1898 are now hard to obtain under any circumstances likely to surround the service in the near future. The regiments had not recovered from the strain produced by the loss of experienced company officers and the sudden increase of companies to more than double their former strength, when various schemes were inaugurated for filling them for the alternating conditions of home and foreign service. So long as a large portion of the army is stationed in the Philippines and the three-year period of enlistment prevails, the companies will always be in a state of reorganization and assimilation of new material.

The success attained with the old organizations was not always due to the multitude of department orders regulating petty details but in spite of them. The application of such orders under present conditions will produce no such results and might prove altogether disastrous so far as fitting all the changing elements for campaign and battle.

Any system to be applied now must be based upon a recognition of the fact that whenever a regiment is ordered to Philippine or Alaska service it must undergo a species of disintegration and reorganization and that upon a return from such service to home stations it will arrive a mere skeleton organization to be again filled with recruits. All this means incessant work for officers and non-commissioned officers.

An examination of the orders of any geographical department in the United States prior to 1898, on the subject of military instruction, will convince any officer of long service with a company that the attempt to regulate each hour's work must result in loss of interest and failure under present conditions. The objects should be set forth, and the year apportioned ac-

cording to seasonable weather and results demanded. This will serve to develop the individuality of regimental officers. The development of character and adaptability for meeting emergencies is of far more consequence in the future than any results possible under a system which compels a report as to how many minutes are devoted each day to the manual of arms, how many to close order, to skirmish drill and to other movements. Especially does this apply to athletic training with the constantly changing personnel of the present day.

During the past year an opportunity to test the value of the views expressed has been availed of and the most satisfactory results have been observed. The garrison of the Department of the Visayas, Philippines Division, consists of native scouts and three regiments of infantry. There are two regimental and three battalion posts. One of the regimental garrisons furnishes two companies as guard at a military prison several miles from the main post but sufficiently near to use the same target range and keep in touch with the regiment. The troops were about completing their shelter quarters and great rivalry and pride had been developed during the progress of the work. This spirit had much to do with the success attained in the subsequent military instruction.

In decentralizing and placing the responsibility for results upon organization commanders it was fully appreciated that sometimes a lazy or indifferent officer may take a temporary advantage of unwonted freedom. This consequence is insignificant when compared with the development of character in the general body of officers. A willingness to accept responsibility and freedom from machine-like adherence to minute allotments of time for drills and other exercises is certain to have its effects in strengthening organizations where they are weak and holding them steady where already strong.

To put the scheme in operation detailed reports of drills to department headquarters were abolished and the year so divided that garrison schools, target practice and other general subjects of instruction should be made the main feature of certain seasons. War Department orders regulate the character and amount of instruction to be undertaken in each year of garrison schools and the amount of target practice. No change was authorized in such cases but on the contrary every consideration was shown because of the interference inseparable from the progress of barrack construction.

None but a physically fit man is able to endure field-service in the tropics. To bring about a condition of fitness of all the men was the object of the orders issued on the subject of athletics and the fine results obtained under the system used are worthy of consideration by the army at large. A description of this system is the primary object of this paper.

At the outset it was decided to avoid the use of the expression "Field Day" and apply that only to field and battle exercises of the various commands when not of sufficient extent to be called maneuvers. Athletic meets were arranged for battalions, regiments and the department. A period of four months was designated during which company training was carried on, teams and experts being gradually selected. The system may be more clearly understood from the order itself than by a description of it.

GENERAL ORDERS, } HEADQUARTERS DEPARTMENT
No. 27. } OF THE VISAYAS.

Iloilo, Panay, P. I., July 15, 1904.

The annual athletic meet for this department will be held at Camp Jossman, Guimaras, November 16th, 17th and 18th, 1904. If by reason of bad weather or other proper cause, it should be impracticable to complete any events or contests, previously announced, the officer in charge shall direct such extension of time as may be necessary.

Physical training, including participation in authorized athletic contests, shall be regarded as other drills, and any injury received while engaged in such exercises shall be reported as incurred in line of duty. With the exception of a small number of veterans, whose physique may have become impaired by long service, all men shall participate in the calisthenic, gymnastic and athletic exercises. Among those who are no longer active will frequently be found men capable of advising and assisting in the instruction of younger men.

Instruction shall be by company. Preference will be shown for those exercises and sports in which all the men may participate. The value to the service from athletic contests comes mainly in the general good effects of the preparation. Each company commander shall select men to constitute teams and representatives for each event prescribed for the department meet. In this way battalion, regimental and department contests will measure the character and amount of instruction quite as accurately as the figure of merit for target practice.

Prior to the date fixed for the department meet, each battalion commander shall select, in such manner as may appear equitable, one company to represent the battalion at the regimental meet. Each regimental commander shall arrange for a meet of the companies selected to represent the battalions of his



FINISH OF QUARTER MILE RACE—BRIGADE FINAL.

regiment, and shall select from them, prior to November 1st, each year, one company to represent the regiment at the department meet.

No transfers of men from one company to another shall be made during the athletic season for the purpose of strengthening any company or increasing the number of experts therein. The officer in charge at all meets shall assure himself by means of certificates or otherwise before any contests begin that this requirement has been complied with.

Prior to the date fixed for the department meet, each regimental commander shall report to the Department Commander, the company selected to represent the regiment, the number of men of the selected company who are to take part in the contests and the names of officers to accompany them in order that transportation to and accommodations at the place of the meet may be provided.

The names of the officers to conduct the department meet will be announced in orders a sufficient time in advance to enable them to familiarize themselves with the rules governing athletic contests and make the necessary arrangements for conducting the meet.

The following events are announced and prescribed for the company contests during the annual department meet:

ATHLETIC EVENTS.

100 yards, dash.
200 yards, race.
220 yards, hurdle, 10 hurdles, 2½ feet.
¼ mile run.
Relay race, four men, ¼ mile.
Running high jump.
Running broad jump.
Putting 16 lb. shot.
Tug-of-war, 8 men and captain.

MILITARY EVENTS.

Equipment race; service uniform, rifle and belt.
Retiring sharpshooters.
Tent pitching; conical wall tent; 5 men, service uniform, rifle, haversack, canteen and blanket roll.
Wall scaling, 9½ ft. 8 men.
Wall scaling, 16 ft. 8 men.
Obstacle race.
Pack train contest; delivering ammunition to the firing line.

GAMES.

Base ball games.
Association football games.

In order to provide for participation of experts who do not belong to the companies selected to compete, regimental commanders shall designate teams and individuals selected from all the companies to represent each regiment in similar events to those prescribed for the company contests. The regimental contests will take place immediately after the company contests.

Rules governing the department meet will be distributed as

soon as practicable in order that all companies may have a knowledge of the requirements during the progress of training.

Commanding officers shall see that sufficient time is allotted to the duties herein prescribed as may be necessary to put all men, except those excused by the Post Surgeon, in good physical condition. The object of this order is to remove physical training from the field of option and place it on the same plane as other drills.

By Command of Brigadier-General Carter:

D. A. FREDERICK,
Major, Asst. Adjutant-General,
Adjutant General.

The participation of officers in the company contests was forbidden: they were authorized but not encouraged to enter the expert events.

Rules to govern the department meet were formulated and published in a circular in the usual way. This enabled company commanders to develop each man along some particular line while at the same time bending his efforts toward putting all men in sufficiently good condition to admit of competitive trials without danger of over-exertion or breakdown.

After three-months' training each battalion engaged in a meet and a company was selected from each to participate in the regimental meet. A splendid spirit was shown in all the preliminary work and contests, and in nearly all the battalions it was an open race for first place until the last points were scored. So evenly were many companies matched that the slightest miscalculation or accident meant defeat.

After the battalion teams were selected the regimental meets followed as soon as possible. When these were concluded interest had grown to such an extent that requests were made, in many instances by the men of the garrisons involved, that the competing companies, or such of the members as were competitors, might be excused from the usual guard, fatigue and other post work in order to fit themselves to win "for the old regiment." The regulation of all details pertaining to training of companies was left to company commanders, the battalion and regimental competitions being conducted under the direction of the respective commanders.

Then came the final tests at the department athletic meet. The number of events was less than that usually provided for in athletic contests and during the progress of the meet several changes were suggested as having become de-



WIRE ENTANGLEMENT.



BATTALION HURDLE RACE.

sirable during the progress of training. There was some disadvantage in having the same individual in several events. This arises in two ways, for an expert athlete may win several individual events and gain a large number of points for his organization, but on the other hand a team may be handicapped by a good man who has just used up his wind and strength in an individual competition.

The usual 220-yards' race was changed to 200 with a view to aiding men in estimating this very useful distance for offhand rifle practice. The intended benefit was nullified by the use of an elliptical track at the final meet, although at some posts straightaway courses were used.

The tug of war with large cleats and a three-minute pull turned out to be the most trying of all events. The strain on the men, sitting or lying close to the ground with all circulation of air cut off by interested spectators pressing close to the ropes, was very great. There is a general disposition to shorten the time of the tug of war or substitute another military event for it.

The companies selected to represent the three regiments of infantry were "K" of the Twelfth, "G" of the Fourteenth, and "H" of the Eighteenth. The events were run off promptly and the winner announced without delay. Care had been exercised to have judges appointed from officers of other than the competing regiments whose decisions should be free from all possible suspicion of interest. All officers who could be spared from their regiments and desired to attend the meet were permitted to do so, and it goes without saying that they profited immensely not only by observation of the athletic and other events but through association with officers of other regiments during a period of intense rivalry.

The wall-scaling, tent-pitching and pack-train contests were of such a high character that the good effects will continue in the competing regiments for years to come. The pack-train delivery of ammunition to the firing line was a most creditable performance, and its value was so apparent that it will be continued as one of the main features of all athletic meets in future. With penalties added the first and second teams accomplished the feat in 6′ $40\frac{4}{5}$″ and 7′ $9\frac{3}{5}$″ respectively under the following conditions:



TUG OF WAR—WINNING COMPANY TEAM IN FOREGROUND.

PACK-TRAIN CONTEST.

Delivering ammunition to the firing line.

The train shall consist of two mules with aparejos and complete equipment. Each team shall consist of three men, one to be furnished with riding animal. Each team will be supplied with four boxes of ammunition. At the proper signal the aparejos and pack put on each mule; pack to consist of two boxes, One man to hold animals and one packer to work on each side. As soon as both animals are packed, with mounted man in front leading one mule, the second may be tied to the first or may be led by one of the dismounted men, proceed along a prescribed course of 880 yards as rapidly as possible to a designated point and take off the load. Each team to be accompanied by the judges. The contest to be awarded to the company team doing the best work in putting on aparejos, securing the load and unloading in the shortest time.

The enthusiasm continued throughout the final meet, and while some disappointment prevailed it served only to arouse a determination to win next time. When the final scores were tallied there was some consolation for while the company of the Eighteenth Infantry, commanded by Captain Butts, who wrote the "Manual for Athletics," won in the company contests, the Twelfth Infantry secured the winning total in the contest of regimental experts and the Fourteenth Infantry led in the games.

As soon as the competitors rejoined their regiments the department commander made an inspection of the entire command and found all the men in ranks had an appearance of rugged health and physical fitness hardly to be expected in a tropical climate.

In announcing the results of the athletic season and department meet the following language was used:

The athletic training involved in the preparation for the meet has amply justified the scheme laid down in the department order.

The result of the season's work has been to make known to company officers the physical aptitude of every man, to develop a number of heretofore unknown experts and to improve many who have already shown marked ability in various exercises and sports.

The art of packing has been revived and a knowledge of it extended to a degree which assures to each of the competing regiments the presence of not less than fifty men capable of packing ammunition and necessary supplies from depots or trains to their organizations.

A knowledge of the best methods of surmounting high walls and overcoming obstacles of all kinds has been made familiar to the entire command.

The season's experience has shown the desirability of some minor changes of events and rules, but generally speaking, the value of company athletic training as opposed to voluntary garrison athletics has been made clearly apparent to all officers and men.

The company contests in each battalion and the regimental contests of companies selected to represent each battalion have served to arouse a spirit of wholesome rivalry in all the organizations.

In the department meet, which was conducted purely as a military function without prizes of any kind, the generous and sportsmanlike spirit observed at all times was most commendable.

In the final arbitrament of war the physical aptitude of the infantry and their ability to shoot with accuracy will always be the determining factors in success or failure. Athletic training and rifle practice, therefore, constitute the most essential elements of all preparations for service and they are absolutely necessary to successful campaigning.



FRENCH VIEWS ON THE EMPLOYMENT OF CAVALRY IN COMBAT.

From the Quarterly German Great General Staff.
(fourth issue, 1904.)

Translated for the Second Division, General Staff, U. S. A.,
by Captain C. W. FARBER, 8th Cavalry.

"IT is commonly acknowledged that the great improvement in firearms will in future wars cause a material change in the manner of combat."

One is forcibly reminded of this statement which, in the year 1861, headed General von Moltke's "Remarks on the influence of the improved firearms on tactics," when one observes to-day's prominent efforts, in practice as well as in literature of all large armies, to accommodate the tactics to the new weapons. Perhaps here and there one overshoots the mark and takes the form for the essence of the matter. In seeking for new forms, the views, according to drill-ground tactics, still crop out at times, failing to consider sufficiently the great diversity of conditions, which in reality demand constantly changing formations as well as the psychological powers, which in the present day's combat come to the front more than formerly.

At any rate, it is conceded that an antiquated method of attack by troops, when opposed to modern weapons, will run them into serious danger, at least, similar in extent, as at the time of the introduction of breech-loaders; yes, it may even result in a catastrophe. One is therefore justified to look everywhere for new forms of combat for the three arms, but one must not seek for success, nor even for preponderate safety in the form alone.

France, too, is zealously advancing in this direction. The formerly abundantly warranted reproach that the combat is tied down by schimatized forms, and that for the free exercise of the powers not sufficient scope is allowed, does surely no longer apply to that extent. It is known that in regard to the employment of artillery France has entered on a singular and unique path throughout. The new artillery tactics are re-

gardlessly directed on the main issue; from the very beginning and during the whole fight, the artillery supports its own infantry before everything else. How far they have hit upon the right thing in this form of combat has yet to be determined.

The last outline for infantry-drill regulations has departed considerably from the former scheme, and has already closely approached the German fighting regulations. In simplifying the formations they even went somewhat further, here and there. It is to be assumed that the final drill regulations now in preparation will be continued on this line. Recently a lively agitation has also entered the cavalry. This branch is struggling with all its might against its detractors who deny its action on the battle-field in future wars, and who wish to deprive it of any influence which the "charge" might exercise on the course of the combat.

Men of the reputation and influence of General de Negrier wish to assign to cavalry in battle, chiefly, only the rôle of carbine marksmen.

It is interesting to follow how the cavalry spirit defends itself against this, what expedients and formations are proposed to vindicate, even to this day, in the face of rapid-fire guns and small caliber repeating arms, the importance of cavalry on the battle-field. The clearing up duties (reconnaissances, etc.) are here to be left out of consideration as long as they are not solely carried out by combat.

The champions of the French cavalry steadily point to the great cavalry charges of the German imperial maneuvers. No one less than General Langlois, who is selected for a high army command in the event of war, most decidedly opposed those critics who see in the evolution of the cavalry masses, personally lead by the Emperor during the German maneuvers, only a parade maneuver, or at best, only a means to stir up the true cavalry spirit. On the contrary, therein lies a well-considered idea, quite suitable to war.

After all, it was clear in France that hitherto the procedure on the battle-field did not longer entirely meet the modern demands. Experiments were tried here and there, until now, since a few years, a definite direction with tangible results is plainly noticeable. It will be attempted to outline a picture of these efforts, as far as it is apparent from the organization of that branch, from the drills and exercises, and from literature.

That there was in no wise a disposition to renounce, under

proper circumstances, the employment of large bodies of cavalry in combat was already manifested at the beginning of the year 1903 in the newly carried into effect "Reorganizations of the Cavalry Divisions." While until then there existed seven cavalry divisions, each composed equally of one dragoon, one cuirassier and one light-cavalry brigade (hussars and chasseurs), henceforth there is a separation into heavy and light-cavalry divisions only. The former consist of cuirassiers and dragoons, the latter of dragoons and light cavalry. As a foundation for this division, the professional press expressly designated the heavy cavalry divisions pre-eminently as battle-riders on account of their particular qualifications; the light divisions, as clearing up (reconnaissance) cavalry. It is open to dispute whether this measure was happily adopted; here it is only to be ascertained if it rests on the possibility and intention to train and employ, particularly as battle-riders, at least a part of the eight cavalry divisions now on hand. There can be no doubt that a division composed of one-half or two-thirds of cuirassiers is less adapted for the manifold problems of clearing up duties and for combat on foot. The French cuirassier is, as General de Negrier scoffingly remarks, still encumbered with the cuirass, out of sentimental remembrance of the charges at Waterloo and Reichshofen.

A motion in the Chamber whether a conversion of cavalry into mounted infantry is not timely was flatly declined at the time by the Minister of War, without misunderstanding the increased importance of the foot combat.

Contemporaneously there prevailed in literature a strong tendency in favor of the cavalry weapon and its employment in battle. In the unusually numerous compositions in the *Revue de Cavalerie*, there were developed, particularly, the following points of view:

The problem of cavalry in battle is even at this day of great importance. But it can only attack in utilizing favorable moments with the greatest celerity.

If before the attack (charge) it must pass over distances of more or less length, without cover and exposed to the enemy's effective fire, these conditions do not apply. The art of leading cavalry therefore consists in being in readiness, close enough to promptly make the most of the opportune moment.

Cavalry must therefore find ways and means within the fire zone to expose itself as little as possible to the effective

fire, and in spite of this, must closely approach the enemy. How is this to be accomplished?

The means hereto are afforded in appropriate formations, correct utilization of the ground and celerity.

As the infantry has acquired new formations and no longer goes into battle with deeply formed masses, but with thin lines, so the cavalry must also avoid the massed formations on the battle-field, even when invisible to the enemy. The column is guidable and in the hands of the leader easily capable of being maneuvered, and therefore, specially adapted in combat solely against cavalry. But in a battle with combined arms the regimental column is entirely too dense and may lead to frightful losses when it gets into the enemy's fire. With the exception of massing to be in readiness, under completely safe cover, its employment is therefore excluded. Squadron columns might be used with less danger.

Most suitable for the advance, irrespective of cover, when within the zone of the enemy's artillery fire are small columns, for example, the column of fours, or twos, with intervals between them. These increase the difficulty of hitting on part of the hostile artillery and in the forward movement cling to, and readily conform to the accidents of the ground. When gradually approaching the opponent and reaching the zone of his infantry fire, the single-rank line is recommended, if necessary, with intervals. The several squadrons can here follow each other at full distances.

Within the limits of hostile infantry and artillery fire the single rank lines are still the most suitable, if necessary, with increased intervals, but the lines must not always follow each other, they must be formed in checker-boardwise order so that no two lines will fall into the same shot sheaf.

Of course, the handling of cavalry, when employed in such formations, becomes vastly more difficult than heretofore when in close order. It must be understood how to advance from a distance in dispersed order, to pass rapidly in this form over ground having no cover, but to reunite again promptly under protection of cover, until finally the object of attack is neared in line. The individual trooper must move skilfully and independently, keeping his eye directed on the leader. For only by means of signals, not by commands, is leading possible in such extensions. This signifies entirely new tactics, which require the most careful practice.

The employment of these formations on the battle-field demands the utmost rapidity of movements. Under hostile fire it often suffices to move a short distance forward or back, in order to get out of the range of the most effective fire. Just so, one must be versed in dispersing and assembling with the greatest celerity. As a rule, only two things are possible on the battle-field: either to halt under complete cover, or to move under the extended gallop. The gait of 440 meters per minute, as required for this by the regulations, must be considered as the minimum. The extended gallop is not practiced nearly enough on drill. Notwithstanding this rapid gait, order and quiet must reign.

Thus far the deployment of masses into small fronts or thin lines, and also rapidity of movement, offer the means to protect oneself against the effect of hostile fire, but there is yet to be taken into consideration, the skilful utilization of the ground.

Formerly, level ground was sought for cavalry attacks, now it is shunned. Undulating country and the accidents of the ground must be used to approach under cover, as closely as possible to the object of attack. In this, one must understand how to traverse dexterously, if only to deceive the antagonist as to the direction of approach, and finally, to surprise him by appearing at an entirely different place from that which he expected. Having crossed coverless stretches at the most rapid gait, the cover is used to regain breath.

These are the principles of the modern employment of cavalry in battle with all arms combined. In the combat against cavalry alone, however, the mass is held in readiness for the charge.

It is deemed a great error if the conclusion is drawn that, on account of the effect of modern weapons, cavalry can operate only in small units; as is also the proposition of General de Negrier that it be split up in this manner.

It need only be deployed to avoid the fire, and again immediately assembled where this is possible. Nor does the infantry, whose combat formation is the skirmish line, on that account sever its regimental and brigade connections.

In any case, it is granted that, in time of peace, as yet not much inclination has been shown to adjust oneself to the modern demands. As a rule the mass is held together, "cav-

alry ground," that is level ground, is looked for, and straightway a charge is made when the hostile cavalry is found.

The leading men of France are also striving in another direction from the one thus far portrayed to secure the perfection of cavalry. The question here deals with an increased employment of the combat on foot and a suitable armament.

In general, the inclination of the French cavalry for the carbine is at present none too pronounced, but it appears, thanks to the lively espousal of the cause by influential authorities, that lately it is on the increase.

What it is intended to reach is that cavalry, in battle as well as in the clearing up duties, must not lapse into idleness when the charge is not practicable, but that it should embrace every favorable opportunity to make itself felt with the carbine.

The Provincial Firing Regulations for the cavalry which made its appearance on September 7, 1903, and which is to replace the Firing Regulations of 1894, bear out this point of view.

The allowance of practice ammunition has been increased to fifty-eight cartridges per man, that is ten more than heretofore. In addition to this, there has also been introduced, in the cavalry combat, subdivision firing, for which each participant has thirty cartridges at his disposal. From the regulations for the combat on foot, it is to be observed that there exists but one kind of fire, the fire at will, which as a principle is delivered briskly. A command to accelerate its rapidity would only lead to undue hurry, because every trooper of his own accord is already shooting as fast as possible. Furthermore, it is interesting to note that commanders of troops are emphatically instructed to contradict the disseminated error that the employment of the combat on foot is restricted to the defense. The spirit of offense is here too, to be furthered by all means. In training, great value is placed on the manner of skilfully approaching, mounted, to the point where the command is to be dismounted to fight on foot, and on the quick breaking off of an engagement.

The clothing introduced some years ago is well adapted to the cavalryman's employment on foot; he wears short trousers, lace shoes and gaiters. The manner of carrying the carbine on the back has been found to answer; it is secure while riding at all gaits and in jumping, and does not interfere with the rider.

The carbine sight is ranged up to 2000 meters; the ammunition equipment, forty-eight rounds, is, however, too small.

The question of arming with the lance is still hanging in the balance. For years the dragoon regiments of the cavalry division and a number of the other dragoon regiments have been tentatively armed with the lance, without as yet coming to a decision. The objection against the lance is that the trooper, already carrying saber and carbine, is overloaded with arms. Light and less numerously, but rapidly moving cavalry, has always proved itself superior to the heavier armed, over-weighted and slower cavalry.

All essential points of view, then prominent in literature, were brought out by General Donop, an authority on cavalry in France, during the course of the extensive cavalry exercises in 1902. In this there participated one cavalry division, one division of cavalry, composed of three corps cavalry brigades, and a single brigade of cavalry. To each division there was experimentally attached a detachment of pioneers on bicycles and a platoon of machine guns.

General Donop was expressly instilled with the idea to contradict the views of the "new school," that is, particularly those of General de Negrier. In his criticisms, as far as they became known through the press, all previously discussed questions were found.

The case was the same during the great cavalry exercises of 1903. Its foundation and progress offer, in other respects, much of interest, and give a picture of the direction in which, in the course of time in France, the training of cavalry is moving, and what object, in regard to its employment, is striven after. There is extant, especially in the "France Militaire," a whole string of reports concerning its progress; but nevertheless, the descriptions are in part faulty, and for the appearance of many there is no adequate explanation. A safe verdict is therefore not always possible.

Shorter accounts of these exercises were at the time published in the German press. As these accounts are not complete in every respect and contain misconceptions, here and there, it may be well to attempt a more detailed description, based on the ground of the material at hand and with special reference to the points of view heretofore discussed.

The maneuvers took place under the direction of General Poulleau, who, at the time, was commanding general of the

Eighteenth Army Corps, and president of the Cavalry Commission. He has since been retired, having reached the age limit.

The schedule of the exercises was as follows:

August 30th and 31st.—Exercises in two parties, within the entire field. (See sketch 4.)
September 1st.—Rest.
September 2d, 3d, 4th and 5th.—Exercises of cavalry and infantry combined, between Aisne and Retourne.
September 6th and 7th.—Drills by one cavalry division, while the other has a day of rest.
September 8th, 9th and 10th.—Cavalry exercises in two parties on the right bank of the Aisne, north of Rethel.

The Minister of War and General Brugere (the latter at that time the general commanding the army) witnessed the exercises for several days.

WAR ORGANIZATION.

Fourth (Light) Cavalry Division (Sedan): General Durand.
- Fourth Brigade of Dragoons (Fourteenth and Twenty-eighth Dragoons).
- First Brigade of Hussars (Third and Eighth Hussars).
- Two horse batteries.
- One detachment of pioneers.

Fifth (Heavy) Cavalry Division (Rheims): General Mayniel.
- Third Brigade of Cuirassiers (Third and Sixth Cuirassiers).
- Fourth Brigade of Cuirassiers (Fourth and Ninth Cuirassiers).
- Third Birgade of Dragoons (Sixteenth and Twenty-second Dragoons).
- Two horse batteries.
- One platoon of machine guns (two pieces).
- One detachment of pioneers.

Second Brigade of Corps Cavalry: General Bonneau.
- Fifth Regiment of Dragoons.
- Third Regiment of Chasseurs.

Sixth Brigade of Corps Cavalry: General Cuny.
- Sixth Regiment of Chasseurs.
- Twelfth Regiment of Chasseurs.
- Sixth Regiment of Hussars.
- One bicycle company (from the 147th Regiment of Infantry).

Besides this, there participated for four days:
- Eighty-fourth Brigade of Infantry (Verdun): 151st and 162d Regiments.

The first two days were to be devoted by the cavalry divisions to extensive exercises in relation to an army.

General Durand was to advance with the Fourth Cavalry Division from Stenay on the Meuse, through the woods of Argonne, toward the river Aisne against Vouziers, in order to

secure the crossing of this river and to hold it open for the troops following.

These entered France from the direction of Trier, over Montmedy, and followed the cavalry division at a distance of two days' marches.

In opposition to this, the Fifth Cavalry Division was assembled in the neighborhood of Tagnon (southwest of Rethel, with orders to stop the march of the opponent, and especially to dispute the crossing over the Aisne.

The starting points of both opponents were consequently about 80 kilometers apart, so that for the advance and clearing up duties of the Fourth Cavalry Division a wide operating space was left. The backwardness of the harvest, caused by the abnormal temperature of August, compelled the director, however, to cut out the exercises intended to take place during these two days.

The war situation remained the same, except that the beginning of the movements was transferred immediately to the Aisne. It was assumed that the East-party, consisting of the Fourth Cavalry Division and the Sixth Brigade of Corps Cavalry, in command of General Durand, had already seized the crossings at Vouziers and Vrizy without, however, being able to establish a firm footing on the left bank. On the evening of September 1st there arrived for its support a brigade of infantry (the Eighty-fourth), with whose help the opponent was to be driven away on September 2d.

It, the West-party, under General Mayniel (Fifth Cavalry Division, Second Brigade of Corps Cavalry and the bicycle company), was waiting in readiness on the left bank on the heights west of Vouziers, and had orders to maintain itself there until midday, September 2d, at which time it was to expect the support of a brigade of infantry. (Assumed.)

On September 2d, General Mayniel, in compliance with this order, established a strong position at Bourcq, opposite Vouziers, with the Second Brigade of Corps Cavalry, the bicycle-company and his artillery. This position was located on the left bank, on the eastern border of the heights, which here retired several kilometers from the river, and fully commanded the coverless level toward the river. The Fifth Cavalry Division was held in readiness in rear of the position, by General Mayniel, so that it could turn to the right or left, in case the

adversary attempted to turn a flank, either above or below, as it was not expected that a frontal attack would be made.

Contrary to expectations, General Durand placed the brigade of infantry and the artillery in position at Vouziers to attack in front and with the cavalry in rear, awaited the result of the attack.

The attack was executed apparently with a strong disregard of a severe, direct fire from the heights of Bourcq. Under cover of some reconnoitering squadrons only, the artillery was advanced from the east to within 1800 meters of the hostile position. The infantry followed immediately, and almost without firing, and without taking up properly deployed fighting formations advanced to engage in the attack. According to the reports of eye-witnesses the attack would, in reality, have been completely repulsed with heavy losses.

Here, however, most remarkably, it was allowed to succeed. The infantry pressed through Bourcq to the top of the heights. The Fourth Cavalry Division followed up and was presently charged by the Fifth Cavalry Division, which had been drawn out to a flank. The bicycle company on one side, the infantry on the other, as well as the artillery of both sides, sought to engage in this combat. The Fifth Cavalry Division was particularly, most effectively fired upon by hostile infantry from a wood at a distance of about 500 meters. The elucidation of the fight must therefore have been very defective.

There was little of naturalness in this picture. The object of the Fourth Cavalry Division should have been, not to wait the result of the infantry attack, but during that, to engage the enemy from a flank or from the rear. Instead of this it simply put itself in readiness in the usual maneuver-attack style, and with but little suitability grasped the idea of co-operation with its infantry and artillery.

For September 3d, the composition of the parties was changed to the extent that the East-party consisted of the Eighty-fourth Brigade of Infantry, the Second Brigade of Corps Cavalry, the bicycle company and the horse batteries of the Fourth Cavalry Division, in command of General Maunoury; while the two cavalry divisions (the Fourth without its batteries) formed the West-party.

According to the war situation, the East-party had crossed the Aisne at Vouziers, on September 2d, and had reached Tourcelles. On the morning of the 3d, it was to advance to

Rethel and seize it. Hostile cavalry in strength was reported to be there.

On the morning of September 3d the Fifth Cavalry Division of the West-party was at Perthes, where the commander was informed that a hostile column of all arms was on the march from the direction of Vouziers. He was to prevent the column from reaching Rethel. The Fourth Cavalry Division, reinforced by the Sixth Brigade of Corps Cavalry, stood at Novy and received orders to support the Fifth Cavalry Division.

The East-party marched from Tourcelles, on the highway, via Pauvres on Rethel; the Second Brigade of Corps Cavalry was charged with the information and security of the column, while the bicycle company had already been sent ahead in the night to Pauvres, in order to hold open the defile at that place. After the infantry had reached Pauvres, its march was delayed one hour by the foot combat of a hostile regiment of dragoons. Two battalions were compelled to deploy against these hostile marksmen. After they were driven off, the bicycle company, in one bound, made the farther edge of the woods, situated between Pauvres and Menil-Annelles. During this advance they again struck the hostile cavalry, which, however, instead of stopping the bicycle company by occupying the pieces of woods, charged it uselessly, and in reality would have only subjected itself to serious loss. In the meantime, the Fourth Cavalry Division put itself in motion from Novy in the direction of Menil-Annelles, while the Fifth Cavalry Division stationed itself in readiness at Annelles, on the flank of the hostile column and waited here motionlessly, for three hours. Only the before mentioned regiment of dragoons was to delay the opponent in front.

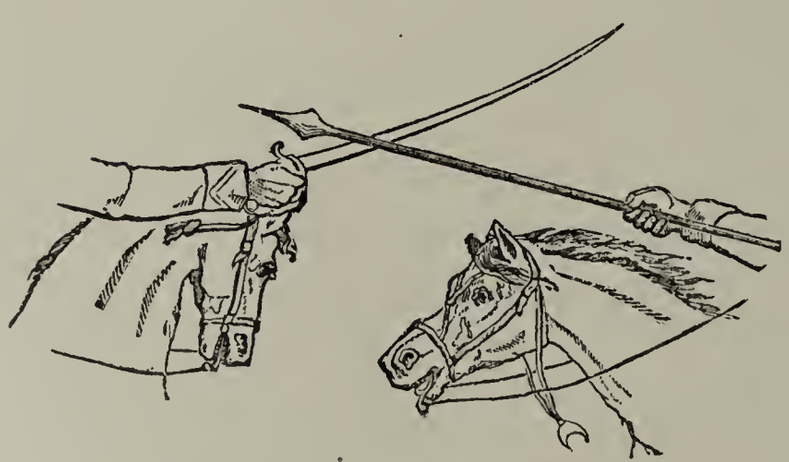
After the Eighty-fourth Brigade of Infantry passed through the woods between Pauvres and Menil-Annelles, it took, in face of the threatening cavalry attacks, the following order of march: one battalion marched in front on both sides of the road as an advance-guard, the center was composed of two battalions, which were thrown out to the right and left of the road as a protection to the flanks, to close, one battalion followed as a rear-guard. Each battalion marched in the open double column. The artillery was placed on the road, in the middle of the square. Evidently the hostile cavalry had already succeeded in this manner, by its mere presence, to

cause the infantry to assume a truly cumbersome order of march, which unquestionably retarded the advance.

But more than this was not accomplished by the cavalry mass of the West-party, as it was repeatedly worsted in persistently charging the ever-fire-ready infantry, on open ground, without any result and without paying any attention to their fire. The purpose which the director had doubtlessly intended to be accomplished in this practice was not reached. It was evidently expected that the cavalry, with its artillery and dismounted troopers, would occupy suitable natural intrenchments squarely across the hostile line of march and compel the enemy to deploy, and then retire, to renew the game at some other point. For cavalry to place itself in this manner in front of a marching column certainly demands adequate, natural intrenchments, which, however, according to all reports, seemed to have been on hand at Pauvres. But should such natural intrenchments not be found, then cavalry must find ways and means to delay the march of the hostile column from the flank, and force it to deploy.

Although both cavalry divisions were separated from the very beginning, the problem was less to fulfil the common object by a march of concentration in a wide space, than by an intelligent understanding as to the different directions, from the front and the flank, it was endeavored to accomplish the result. Consequently, on this day, too, the cavalry failed to fully grasp the problem of operating against hostile infantry.

[TO BE CONTINUED.]



REMARKS UPON TACTICS, WITH REFERENCE TO OUR INFANTRY DRILL REGULATIONS.

By Colonel JAMES REGAN, Ninth Infantry.

IN a previous paper published in The Journal of the Military Service Institution for September and October, 1904, we referred to this subject, and this paper may, to a certain extent, be considered a continuation on the same lines, which briefly calls attention to the best tactical ideas of the day as gleaned from actual battles and from the observations of military experts. Our officers should certainly have a sound theoretical and practical knowledge of what is best in tactics as modified by the improvements in armament. Major Hoenig accounts for the heavy losses of the Germans in 1870, because of the lack of knowledge on the part of the officers of the new French rifle (Chassepot). A mistake somewhat similar was made in the Cuban War in sending into action volunteers with a rifle tactically out of date. It is to be hoped that this will never occur again. To make proper calculations in war our officers should, as far as possible, be acquainted with the organization and tactics of the enemy.

The principles upon which our present tactics are based are those embraced in the first editions of General Upton's "Tactics," modified to suit the improvements in firearms, and with smokeless powder, and based upon experience in war. The basic idea is to eliminate from the course of instruction everything that is not absolutely essential in war, or all formations presumed to be obsolete. Certainly the tactics have been made so simple that most men of intelligence and necessary aptitude will readily understand them.

It is well understood that drill regulations are only the expression of general principles, the initiative or great discretion in war or active service must be allowed officers as to details. To this all foreign armies give serious attention and allow a wide latitude in the training of troops. Their tactics prescribe a general method of attack, permitting much elasticity. They cultivate simplicity and naturalness, and cau-

tion against a martinet-like fastidiousness, especially so on points of tactics. The officers are required to use their brains as they must do in battle. The tendency has been, therefore, to cut out all close-order formations, clinging only to those that are considered essential. In some of the best continental armies of Europe the only close-order formations used are those for marching and deploying, much attention being given to the regularity of the step.

The prime object in all military or tactical movements is "perfect order, cohesion, celerity, quietness, a seemingly intuitive perception of every point of advantage at the moment it offers itself and promptness to seize it, together with a harmonious working of the whole to accomplish the end in view." If the strategy employed and the objective are well selected, and security and information have been energetically and intelligently observed, success is assured.

The General Staff in its recent publications is trying to keep up with the times; and it is highly essential that we do so or we shall be made fools of in the first year or two in any great war against any of the war powers of the world, owing to their habit of keeping up in theory and practice with the advanced and most recent improvements in war. "No one," remarks a recent observer, "pretends to believe that any army has yet discovered a system of tactics that it will finally find best suited to it in the progress of war. But all agree that armies trained like those of Europe of to-day, in which subordinates are accustomed to seeing battle maneuvers of masses of troops, and are in the habit of using their discretion in order to conform to the exigencies of the occasion when handling their own men in mimic battle, in actual war will shape their tactics to the conditions more quickly than armies in which there are no maneuvers, and in which formal drills and precise battle formations have destroyed courage to take the initiative and prevented the development of intelligence fitted for the exercise of responsibility."

The importance of the fall maneuvers, or the concentration of our army in large camps was pointed out in a previous paper in this journal; and whether or not such affairs are carried through properly, their value is recognized by the military world. We are conscious of their value, and what every good army in the world, including the latest, the "Little Japs," are doing we should do, not spasmodically, but as a regular

thing. It is not claimed for these maneuvers that they will show "this or that method of combat to be good or bad." They can only "illustrate theories and not prove them." But while they are far from being satisfactory or decisive as to disputed military questions, still their enormous advantages for war preparation are freely admitted.

What is particularly claimed for these large camps is (1) that where the units are properly instructed in advance, they afford excellent instruction for generals and high ranking officers and the staff in illustrating the combined action and mutual support of the different arms, the only way certainly of making capable leaders; (2) that the officers are taught how to supply and care for their troops and to study the strength and endurance of their men while traveling long stretches, and to adapt them to the terrain, and also to estimate the strength of military forces, distances and many useful things incident to war; (3) that they take the men out of barracks and armories to be taught on every variety of ground the most recent alterations in field tactics, to care for themselves under conditions closely assimilating to those of war, in marching, sleeping etc. All fancy moves in drill regulations are dropped, the time and labor of the troops being regarded as too valuable to be thrown away on such affairs, which are of no importance or use on the battle-field.

In future wars much will depend upon the training and discipline of our troops, and the preparation we make in peace for war. If the training is right it will show itself by the readiness with which officers and men adapt themselves to every emergency without reference to prescribed rules. It has been well remarked that in these days, more than ever, a perfect drill book presenting a most skilful method of attack cannot make soldiers succeed, whose individual habits as fighting units are bad.

Our soldiers, due to their intelligence and individuality, are concededly among the best soldiers of the world. But, as one of our observers remarked: "His very individuality becomes a menace and danger for instructives, obedience to the orders given for his future guidance after he has passed out of the control of his officers, which is a *sine qua non* to his success and that of his command."

Victories prior to Napoleon, and during his day, to the present war in Manchuria, have been due to well-disciplined

armies. Well-trained and seasoned troops will bear the severest hardships, even with heavy packs on their backs. Our military observers abroad, from the easy way foreign armies carry their packs, have suggested that our men be required to carry their war packs on drills, on guards and during the combat formations. This might prove useful up to a certain point. Our troops have never been trained in this way. In the old days a few officers would make the men mount guard with their knapsacks, and at odd times as a punishment, but these were spasmodic and never long continued. The soldier's impedimenta becomes terribly irksome on a trying march and in the excitement leading up to battle. During our first day's march from Siboney, the day after our cavalry and the rough riders had their fight, blankets, blouses and other articles were scattered along the road; and when our regiment was in hot pursuit of the enemy, during the series of movements from San Pedro Macarte to Cavite, the men threw away almost everything, stripping to the waist, trusting to luck for food, and the same thing occurred at Tientsin. At San Juan, as we came under the fire of the enemy, blanket rolls were piled on the side of the road. It is the experience of all our wars that when the American soldier is hard pressed, or when he is going into battle, everything but his gun and belt must go. The impedimenta of the Russians in Manchuria was much in their way at critical moments. The veteran will be found with a few crackers in a towel fastened to his belt, and his canteen kept filled for emergencies.

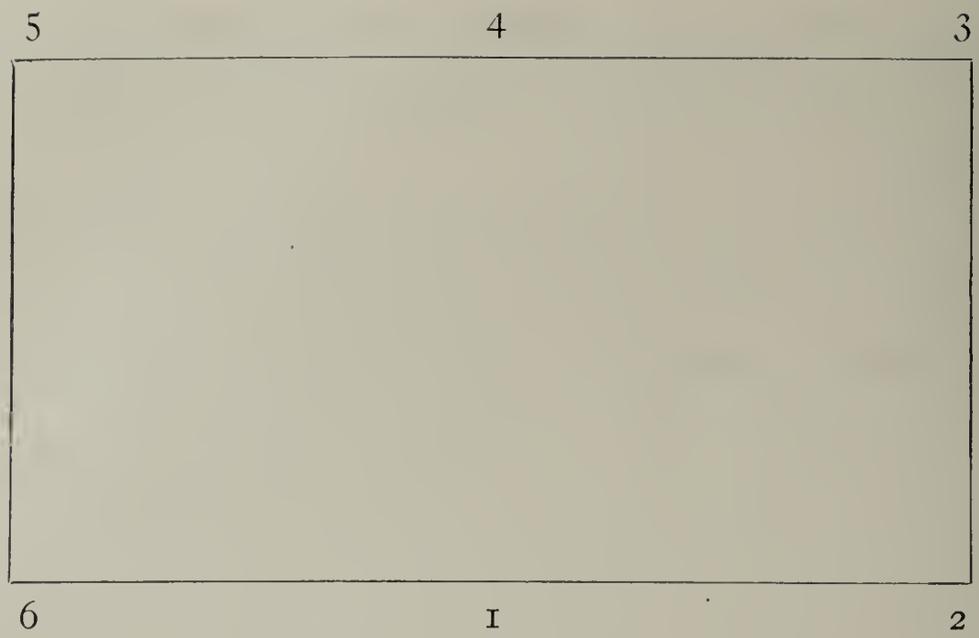
It is a matter to be regretted, and a decided move backward, that our fall maneuvers have been given up, even for a time. Our past history should convince our people that this is a mistake, and if they wish to be thoroughly convinced of this fact, they should read General Upton's book on our military policies, one of the ablest political and military works in our history.

Too much attention cannot be given to tactical subjects, as they embrace nearly the whole art of war. Our present tactics, in its different divisions, prescribe the careful theoretical and practical instruction of officers, non-commissioned officers and privates, and let us remark here that there is no part of the drill regulations which calls for more attention than the school of the soldier, the foundation of all military instruction, the principles of which pervade every other formation

from the company to the highest unit of organization. And if these principles have been carefully imparted to the individual and the squad, the results will show in the more intricate movements.

It is a truism to-day that success in war is due to good infantry, hence the necessity for its careful training. It forms about four-fifths of an army, and upon it, in consequence of the improvement in armament, will devolve most of the hard fighting. Boguslauski, in remarking upon the War of 1870, says that "however great the effect of artillery, however enormous the loss of the French by our shells, there was still no example of a really great result being due specially to artillery." The infantry gave the decisive stroke, as in previous wars. Even as far back as Waterloo the infantry that had been ridden over by the cavalry, had its fire only temporarily interrupted. It is claimed for the cavalry, however, that they still may ride down broken infantry with chances of success. The Germans and the French think so. These matters will perhaps never be settled, but certainly the infantry would fare badly without its accessory arms, the artillery to prepare the way and the cavalry for security and information. The importance of these arms having greatly increased in recent years, an interharmonious action is expected.

In the revision of the infantry tactics, many close-order formations have been left out that were thought essential in prior editions. Let it be hoped that the pruning has been done wisely, and that what remains will be found sufficient for all purposes of war. The Germans, Austrians and other nations have simplified their close-order formations. The first mentioned has still the long columns, double columns and deep columns. A slight reference to the changes in close order may be of interest; and while the battalion is really the tactical unit of the higher organization, we shall consider here only those in the regiment, being the happy medium. By the use of the rectangle or the quadrilateral, the changes may be better perceived and understood. We shall not go into it analytically, but simply refer to it;



This figure may be considered a parade ground, armory or a field of maneuver. Of course it need not be a square; it may take any shape, and diagonal or oblique lines may be indicated. Let us see if the new tactics allow for a regiment to be placed in any position leading up to and incident to battle.

The regiment drawn up in line at No. 1 may be moved to No. 4 in line and by facing to the rear, back to No. 1. This movement may be made from any front and may be made to take any line. This is the same as the old tactics, with but slight changes.

This is the only way prescribed for a regiment to advance in line. Under the former tactics it was allowed to advance in line of platoon columns. This change is, no doubt, due to the fact that abroad the advance in action is the company front, company column of platoons being discontinued. Of course the advance can be made in two or more lines. It was also allowed to advance in line of companies in column of fours.

To the right or left to No. 2 or 6 by squads right or left, or the same by company column, and by facing to the rear, the reverse ground may be gained right or left by obliquing.

These conform closely to the old tactics. The movements breaking from the right or left to march to the left or right, are dropped. They were only a broad countermarch, which, if ever necessary, can be accomplished by the new tactics. The commands for forming the regiment in different lines are omitted, as the same results are obtained by the verbal directions of the colonel. Right forward, fours right, etc., and right

front into line of companies in column of fours, always impressed me as desirable movements in wooded countries. To the right or left front into line, or on right or left into line from column of squads or companies in almost any direction.

The method of accomplishing this is by methods much more indirect than the old tactics, which used the most direct or diagonal lines, which, in a wooded or close country, has much merit. Officers who have handled troops in woods must recognize this fact. Time is a big factor in war. To face to the rear is no longer embraced in the command. There is no special tactical reason for the old command, as the same is obtained by facing about. To form line by two movements from column of squads or company, or on interior battalions, are dropped, as appropriate directions may be given to the rear battalions to take any formation.

Column of masses may be formed:

To the right or left by first forming column of companies or squads.

In movements of this kind on interior battalions are omitted. By former tactics ployment could be made on the center at No. 1. Faced to the rear in the command is also omitted.

To ploy masses to the front, or at No. 1 or 6, is nearly the same as formerly.

It would seem to be more decided if the leading company commander was allowed to judge the distance to the right or left.

To change direction to the right or left from column of masses, is omitted.

This is a compact movement, and one that holds the forces well in hand whenever it might be necessary to change direction for deployment or any other movement. But as such movements are only made beyond effective fire, perhaps the same is obtained by a simple change of direction.

To deploy column of masses by right or left front into line; if to the rear the column must be first faced to the rear.

While these are the only ways prescribed for deploying, the same results are obtained as in the old tactics. It does away with deployments on interior battalions; and the only deployment into separate lines is column of battalions; but any number of lines may be assumed by special directions.

Line of masses:

To the right or left, or right or left into line of masses from column of squads.

This differs but little from the old tactics; but formations on interior battalions, and faced to the rear in the commands, have been omitted; and so with on right or left into line, which might be a very desirable command at times; still nearly the same results are obtained by "to the right or left".

To change front from line of masses is omitted, but the same result may be obtained by two movements.

The platoon formations, having been eliminated from combat formations, have greatly simplified the regimental formations.

Battalions "change direction by the right or left flank," a movement in which the troops are held well in hand, is omitted; and so of "battalions columns right and left," forming column of masses or line of masses.

This subject will not be further touched upon, as the purpose is only to call attention to the changes in close-order formations, the normal order. The regulations require us to have a good theoretical and practical knowledge of close and extended order formations, and to be able readily to apply them, so the conditions at the time must decide the best formation or combination to be employed.

The plan and choice of formations are left to the commander who must conform to the terrain and opposing conditions. The nice parallel lines of the drill ground may have good effect, but there is no question of alignment in the line of battle; a common front and general alignment, with a knowledge of the ground and the objective, is enough. Care, however, must be taken not to impede or endanger others.

The battle is a very orderly affair, the preliminaries and subsequent guidance leading up to it are defined the extended order of the higher units of our drill regulations. We first have the long column of route, next the close order or assembly formations, prior to the extended or dispersed order, and then any formation to meet the varying conditions of the battle. We might cite many examples, but the following will serve as an illustration: Take a division *a la Prussian* as reported by one of our observers, preceded and flanked by the cavalry, coming under the enemy's artillery fire; the division and corps artillery draws out of the column from its position

in the center and goes into battery on the reverse slopes. The location of the enemy having been reported to the division commander he, accompanied by his brigade commanders and staff-officers, rides forward to reconnoiter the hostile lines. The necessary orders are then given to the brigade commanders, designating to each his objective. The reserve is also designated and reported to the division commander. This is all, at first, the general can do, the extensions being left to his subordinates, but he may correct mistakes and determine when and where to use his reserves. The brigade commanders conduct the fight and give to their regimental commanders the necessary orders, designating their places and objectives—and how admirably our tactics provide for this. The brigade, in turn, has its reserves, and so it goes down to the company; each giving the necessary direction and assuming the initiative when necessary. Much depends now upon fearless leadership. The cavalry, having done its part in security and information, is held in rear of the center or on an important flank. This matter may be further touched upon in a consideration of the offensive and defensive of our new tactics.

The great tacticians of the day are of one mind in saying that the success of the Germans in 1870 was due to their skill in handling the higher units or masses, and this they gained in their fall maneuvers. Without such instruction and experience how difficult it must be "to know how to bring the masses into ploy at the right time; to deploy masses here and there when needed; to combine the movements of the masses."

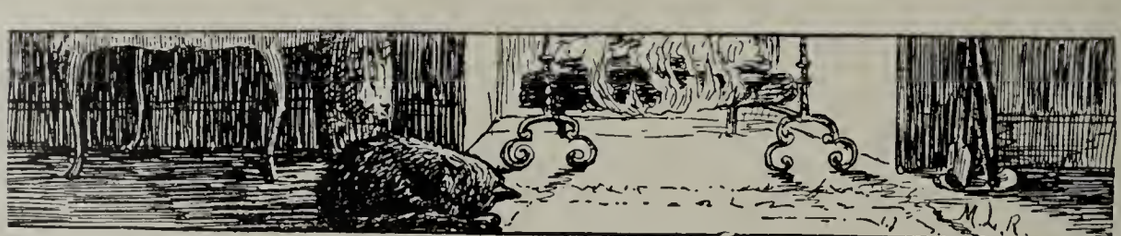
The German idea is to press ahead with strong lines, and this idea the Japanese are carrying out to-day. They appreciate the importance of close-order formations; and it is a principle of their drill that the soldier should be kept well within the range of the voice as long as it is possible. They certainly should not be advanced or extended until something of the plan or objective is known. If this is not strictly observed, or a wrong direction or objective is taken, it will lead to trouble, and the commander will find himself at the end without troops, as it is almost impossible to regain control. Everything, therefore, should be done with the greatest care, energy and precision, and of this the Japanese are giving us fine examples in all their battles.

The idea of advancing in as compact bodies as possible is far from the old idea of facing each while at 300 yards. Ex-

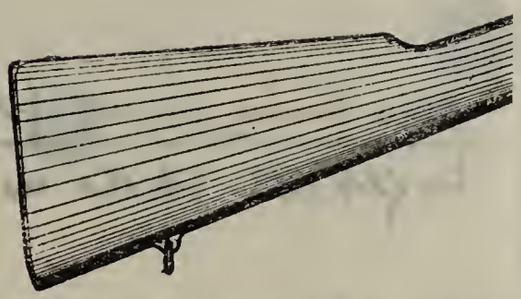
perience in war, with the progressive improvements in firearms, has taught us better. For example: the Austrians in 1859, when they charged the Prussian extended lines with platoon column in mass; the early battles of the Germans in 1870, when the compact formations gave way to a dispersed order with supports about 450 yards from the skirmish line, and the reserves 900 yards in rear. It was demonstrated then, and later, that the column formation cannot be used within the range of effective fire. In the Turkish War of 1877, according to Greene, the first line of the Russians was of skirmishers, behind which, at 300 yards, the troops marched with dogged bravery in two ranks, shoulder to shoulder, or in company column with platoon front, far inside of effective fire, the attack being really in solid lines; the losses were heavy. General Skobeloff soon changed this formation to open order. Boguslauski says, that "Even in the charge, troops in close order played no considerable part, we may say, only an indirect part. A dense line of skirmishers always preceded them, and how often it happened that during the forward movement they dissolved themselves and ran to join the skirmishers so as to get at the enemy as soon as possible."

A good general rule, and one based upon experience in war, is to bring as great a number of men as possible into the firing line at short ranges, when the men are not too much exposed; but when the men are moving over open ground the line should be kept thin without weakening it too much, or interfering with the forward movement. The Japanese are showing marked skill in this direction and their ways are worthy of study.

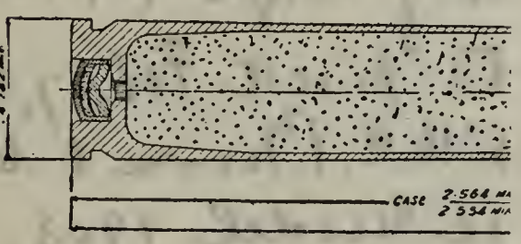
[TO BE CONTINUED.]







Fig



BALL CARTRIDGE.—The Caliber .30
a conical body joined by a sharper one,
to provide for extraction of cartridge, a
the month and the year of fabrication a

REDUCED RANGE CARTRIDGE.—(Fig.
for full-range practice do not exist, or
The Reduced Range Cartridge is pro
about 900 feet per second. With this ve
800, 600 and 500 yards, respectively.
at the shorter ranges.

The case of the reduced-range cartri
The reduced-range cartridge is only

Fig. 1.

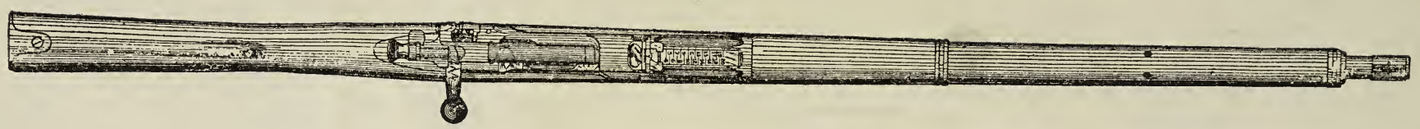


Fig. 2.

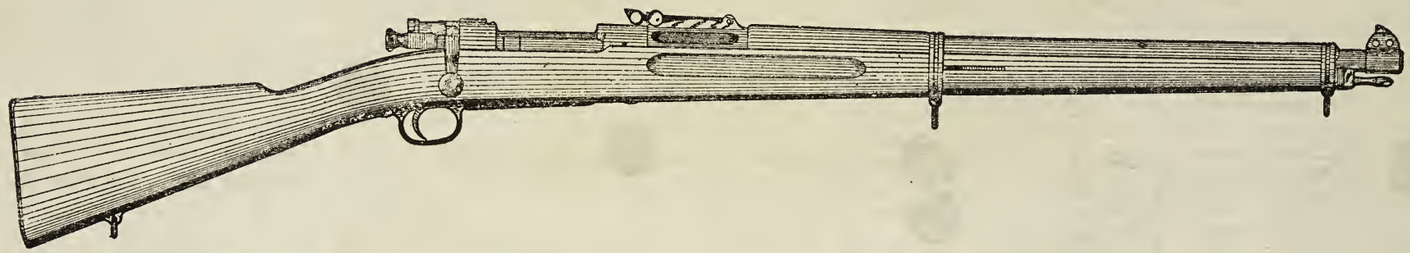


Fig. 127

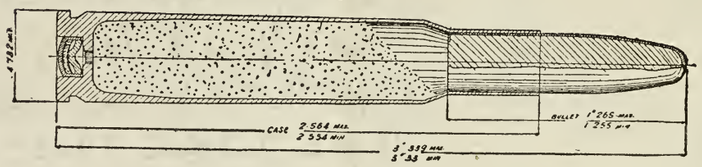
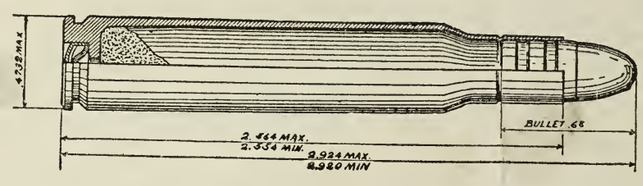


Fig. 132.



AMMUNITION FOR U. S. MAGAZINE RIFLE, MODEL OF 1903.

(Ordnance Notes,)

BALL CARTRIDGE.—The Caliber .30 Ball Cartridge, Fig. 127, consists of the case, primer, charge of smokeless powder and bullet. The case is of brass. It has a conical body joined by a sharper one, called the shoulder, to the neck, which is the seat of the bullet, and very nearly cylindrical. The head of case is grooved to provide for extraction of cartridge, and is provided with primer pocket and vent. The initials of the arsenal where the ammunition is made, the number of the month and the year of fabrication are stamped on the heart of the case.

REDUCED RANGE CARTRIDGE.—(Fig. 132.)—This cartridge is devised for the purpose of permitting target-practice to be had in those localities where facilities for full-range practice do not exist, or where, on account of the great range of the standard ball cartridge, there are objections to its use.

The Reduced Range Cartridge is provided with a lead bullet weighing 220 grains. The charge of powder is sufficient to give to the bullet a muzzle velocity of about 900 feet per second. With this velocity a range of 300 yards requires a slight elevation of 1000 yards, and ranges of 204, 125 and 89 yards require elevations of 800, 600 and 500 yards, respectively. With the reduced-range ammunition and a system of targets of reduced dimensions, the full-range target-practice is simulated at the shorter ranges.

The case of the reduced-range cartridge is colored black, to distinguish it from the ball cartridge.

The reduced-range cartridge is only for use at target-practice.

This firing being for "Elevation" effort was made to get all shots as close as possible to this horizontal line

Plot of target (exact size) of ten consecutive shots fired Feb 27, 1904 at 300 yds by Capt W.C. Brown 1st Cavalry with U.S. Magazine Rifle Model 1903. Mean vertical deviation 1.1"
" horizontal " 1.9"
" absolute " 2.2"

Wind 16 miles per hour from 4 o'clock



OBSERVATION TOWER, WITH TARGET IN DISTANCE.
EXPERIMENTAL RANGE, FORT CLARK, TEXAS.

ing all firings, so as to obtain exterior ballistic data of the rifle. This rifle may not be perfect, and some of its features may meet with criticism, but one thing is certain, it is a distinct advance over our present arm—the Krag and represents many months of hard and patient effort on the part of those ordnance officers most skilled in this line of professional work who have been imbued with the sole idea of turning out the best possible arm.

The aim had been to secure an arm acceptable to the line of the army, whose suggestions have been willingly received.

The following tabulated data, which the rifleman will naturally seek in making comparison of the new and old arms, has been taken mainly from the official descriptions of these arms published by the Ordnance Department:

TABLE SHOWING RELATIVE EFFICIENCY OF THE U. S. MAGAZINE RIFLE, MODEL 1903, THE KRAG RIFLE AND KRAG CARBINE.

	U. S. Magazine Rifle, 1903.	Krag Rifle.	Krag Carbine.
Weight	9.09 pounds	*10.65 pounds	8.0 pounds
Length	43.43 inches	48.9 inches	40.9 inches
Dist. between sights (leaf down point blank)	23.32 inches	24.3 inches	16.2 inches
Muzzle velocity	2300 feet	2000 feet	1920 feet
Maximum range	4781 yards	4066 yards	4016 yards
Weight of bullet	220 grains	220 grains	220 grains
Weight of charge	43½ to 44½ grs.	35 to 42 grains	35 to 42 grains
Powder pressure in chamber	49,000 lbs. per sq. in.	38,000 lbs. per sq. in.	38,000 lbs. per sq. in.
Calculated maximum energy of free recoil	18.33 ft. lbs.	13.66 ft. lbs.	14.92 ft. lbs.
Mean absolute deviation, 1000 yards (Radius of circle of shots)	13.8 inches	14.9 inches	
Maximum height of trajectory { 1000yds	19.57 feet	28.57 feet	30.19 feet
Maximum height of trajectory { 2000yds	154.85 feet	227.58 feet	234.81 feet

One need go no further than to examine the comparisons in the above table to see the marked superiority of the new arm over the Krag. The infantry is to have a rifle about 1½ pounds lighter, considering weight of bayonet and scabbard of the Krag, but with a distance only an inch less between sights than formerly. Notwithstanding the distance between sights is but slightly decreased, the new arm is nearly 5½ inches

*Weight of bayonet and scabbard both included.

shorter, and therefore more readily handled in close, brushy country than the Krag.

The cavalry must carry an arm a pound heavier and 2.5 inches longer than the Krag carbine, but the distance between sights is increased by over seven inches. It can well afford to carry this slight additional weight and length for the sake of the increased prestige secured by having exactly the same gun as the infantry, and an increase of about 44 per cent. between sights.

Both infantry and cavalry will now enjoy an arm which gives a trajectory about 34 per cent. flatter than that of the Krag, the prestige of carrying a more powerful weapon than is used by any other nation—a matter of satisfaction and pride in time of peace, and of marked practical advantage in time of war.

The increased recoil may at first cause some misgivings, but it is not as great as that of the old Springfield, the predecessor of the Krag. By holding the piece snugly in to the shoulder, men were able to withstand the blow of the Springfield. Our experience at the experimental firings showed that there was no cause for alarm in the somewhat heavy recoil of the new arm. Any man whose physique is so poor that he cannot withstand this moderate shock is entirely out of place in the army.

The report of the piece on discharge is quite sharp and penetrating; much more so than anything to which we have been accustomed, and men will soon learn that it is well during firings not to get too near the muzzles of their neighbors' firing.

These two slight drawbacks—heavy recoil and sharp report—are inherent in a powerful firearm and the writer hazards the opinion that we have about reached the limit in small arms. Construct a still more powerful rifle musket, and you will have a heavier recoil and a more deafening report, to withstand which we must breed a stronger race of men!

In the rifles issued to the cavalry it is thought that the stacking and sling swivels might well have been omitted. The cavalry not only does not need them but their presence requires a slightly more bulky scabbard.

The rear sight gives to the rifleman the distinct advantage of a greater distance between sights than heretofore, which distance is uniform, instead of varying with the range as in case of sights used in times past. It is quite strong



FIRING STAND USED IN EXPERIMENTAL FIRING.

enough for infantry, but the cavalry will probably receive it with some misgivings, as it stands up from the barrel more than to the sight on the Krag, and is consequently more liable to damage, especially when hastily withdrawn from the scabbard. If accidently turned completely over to the front, a slight blow will bend the leaf, rendering it unserviceable. The test of actual service may (and it is hoped will) show the above fears as to the serviceability of the sight for cavalry to be without foundation.

The very fine knurling on the left of the leaf effectually prevents any slipping of the slide when once fastened.

The rear sight being secured to the barrel by a band instead of being attached by screws, as in case of the Krag, is also a desirable change.

Other marked improvements which will be noted are:

A much lighter, smoother and easier trigger pull of from 3 to 4½ pounds.

A magazine system of the Mauser type which work more smoothly and easily than the Krag, and does away with the unsightly side magazine.

A curved bolt handle, something that will be particularly appreciated by the cavalry, as lessening the thicknes, of the piece from side to side in the vicinity of the magazine.

A "pull through" with a good brush-wiper attachment, which is snugly stowed away in the butt of the piece.

The numbers on the rifles are in large plain figures. Instead of placing them on the right side, however, it is thought that they might better have been placed across the end of the receiver, so as to be more easily read when standing in the gun rack.

The ramrod-bayonet, adding but little to the weight of the arm, seems to answer all the essentials of this additional means of defense and does away with carrying a bayonet and scabbard attached to the belt.

It is being vigorously criticized by those infantrymen who are strong advocates of the bayonet. In reply to their criticisms it may be said that while the ramrod-bayonet is by no means as formidable as either the old triangular or the more recent knife bayonet, still it is fairly strong, and has withstood the test before the original board, two of whose four members were infantrymen.

It adds so little to the weight of the arm, and is so conveni-

ently stowed away underneath the barrel when not in use, that it will probably *always* be available, and will not be left behind or thrown away on long marches, as so frequently occurred with our infantry in the Philippines. (*See footnote p. 500.*)

A detachable telescopic sight for expert riflemen and sharpshooters is now being worked up.

The most promising design of telescopic sight so far tested in the effort made to obtain a suitable device for issue to ex-riflemen is shown in the accompanying illustration (*page 496*).

When completed our best shots should, with its assistance, do remarkably fine shooting.

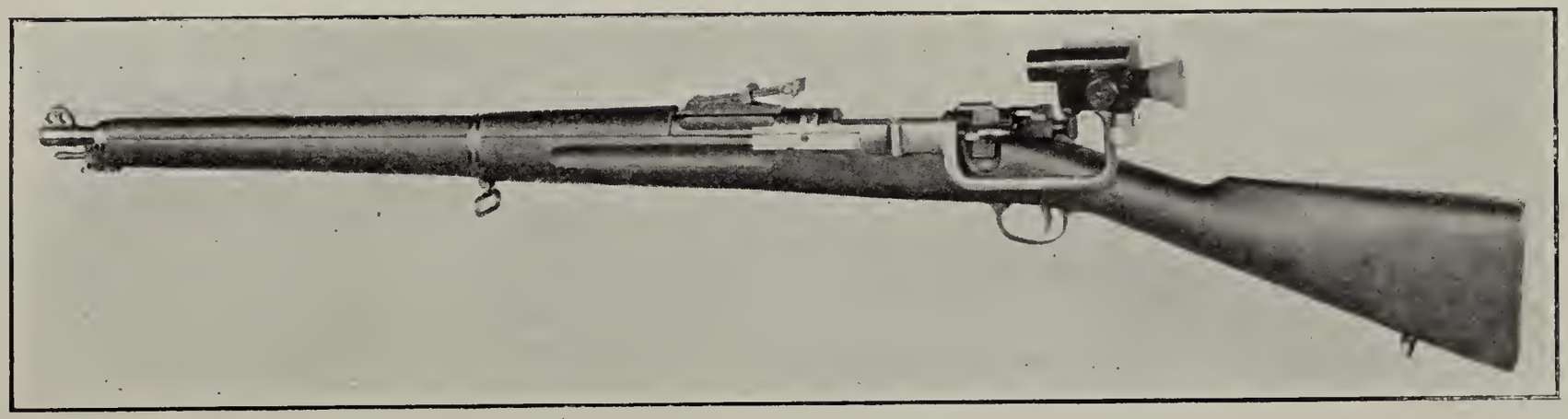
With the notch of the rear sight exactly over the axis of the bore, the drift (meaning by this, "drift" proper, as well as all other causes of deviation except wind) of the rifle is to the left, varying considerably, however, with different guns. The average drift was found to be about 3.9 inches at 100 yards and increasing to about 1100 yards where it reaches 26.6 inches. It then decreases, crossing the line of fire at about 1800 yards and at 2000 yards is 20½ inches to the right.

The rifling, being a right-hand twist, the bullet should in theory be found at all times to the right of the plane of fire; but as the rifle is discharged there is *something* not well understood, which throws the bullet to the left to the extent above shown.

This has all been practically automatically corrected up to 1000 yards by placing the notch of the rear sight .021 inches to the right of the plane of fire which gives us such slight variations from the true ones, as will be seen below, that we may regard the drift up to 1000 yards as being corrected by the altered position of the notch of the rear sight.

DRIFT WITH CORRECTION AS MADE ON REAR SIGHT.

Range.	Left. Inches.	Right. Inches.		Inches.
100	0.6	.....	Deviation of bullet produced by a 1-mile wind normal to the plane of fire.	0.1
200	1.1	.....		0.4
300	1.4	.....		0.7
400	1.5	.....		1.3
500	1.2	.....		2.1
600	0.6	.....		3.0
700	.....	0.4		4.2
800	.....	1.7		5.6
900	.....	3.5		7.4
1000	.....	6.0		9.4



U. S. MAGAZINE RIFLE—MODEL 1903.

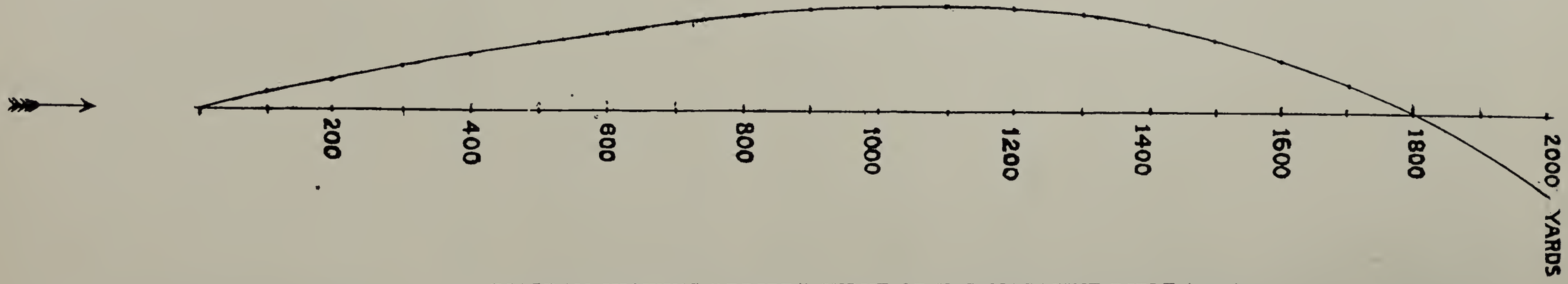


DIAGRAM SHOWING "DRIFT" CURVE OF U. S. MAGAZINE RIFLE (1903).

NOTE.—This has been computed from experimental firings with the line of sight in a vertical plane through the axis of the bore. Calculated by Capt. J. E. Hoffer, Ord. Dept. U. S. A., on results of experimental firings made near Fort Clark, Texas, under direction of Major W. C. Brown, 3d Cav.

A peep sight has been provided, evidently to meet the desires of the few whose main use for the gun is to use it as a sporting or target-rifle, rather than an arm to be used in battle. We did not find the peep-sight to be a success, but regarded it as no great loss, for a peep-sight seems out of place on a military rifle.

Since our experimental firings the peep-hole has been enlarged from 0″.04 to 0″.45, which has been found to be a great mprovement, and it is believed that the peep-sight will now be more satisfactory.

In the verifications of sight graduations for elevation a *strictly half sight* was used in all firings. If we were to criticize the Firing Regulations it would be that they do not put sufficient stress on the desirability of the *exclusive* use of the half right which is the only sight which can be used in all conditions of weather. The soldier who one day uses a full or half sight and and the next a fine sight is rarely a steady shot.

While in the manufacture of the rifle no pains have been spared to secure uniformity, it is an established fact that no two rifles shoot exactly alike.

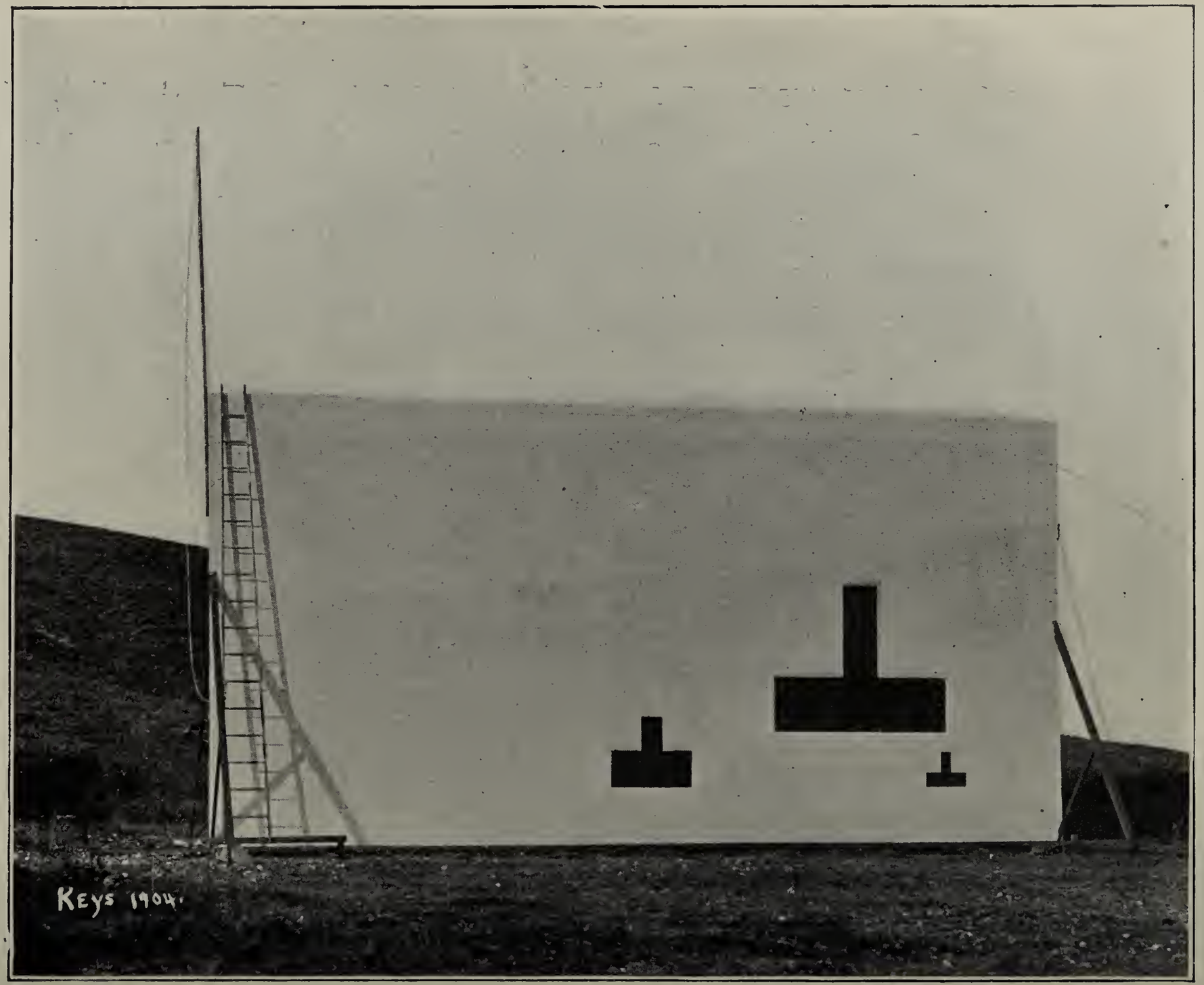
The figures given for "drift" and deviation due to a mile of wind normal to the plane of fire are simply the averages secured from a number of guns from which have been fired many thousands of rounds of ammunition.

While the probabilities are that the rifleman will find that the drift in his rifle has been automatically corrected for him, he may possibly find, if he takes the trouble to test his rifle, that with the wind-gage at zero, on a perfectly calm day, his rifle shoots a number of inches to the right or left of the point aimed at.

It is therefore strongly advised that when a rifle is issued to him the rifleman proceeds to test it at say, 200, 300, 600 and 1000 yards.

Probably the simplest way to do this will be about as follows:

Let the back of an ordinary paper target be ruled in squares ten inches on a side. Now cut a bull's-eye shaped thus  from black paper (tar paper from quartermasters' clothing boxes answers very well for this purpose) and attach it, by pasting or other means, to the middle of the target, the lower edge of the bull's-eye coinciding with one of the horizontal ruled lines, and the middle point being on a vertical line which,



BOARD TARGET (20′ x 40′) USED IN EXPERIMENTAL FIRING.

of course, exactly bisects the vertical arm of the inverted T-shaped bull's-eye. This point thus becomes the origin of co-ordinates, which is the point to be aimed at.

A 10-inch rule, divided into inches and tenths, is also provided for measuring the location of the shots in the square in which they happen to fall.

The thickness of the horizontal and vertical branches of the bull's-eye are about the same and vary with the range, the vertical branch being of such thickness as to make it apparently the same thickness as the front sight when aiming at the bull's-eye.

A small stand, provided with a muzzle rest for the rifle, and also a stool for the firer, should be supplied. The cut at head of this paper shows the stand used at the experimental range.

Seated comfortably at the stand, with a muzzle rest for the rifle and a rest for his elbows, and firing in perfectly calm weather, with his wind gauge exactly at zero, the marksman fires a number of shots to get the correct elevation, lowering or raising his sight according as his shots are going above or below the base line, which is the line of the lower edge of the bull's-eye prolonged. He then endeavors to get a fairly close cluster, say:—

About	12	inches	in diameter	at	200 yards.
"	16	"	"	300	"
"	30	"	"	600	"
"	64	"	"	1000	"

or perhaps with a little greater dispersion of shots, he may fairly conclude that the center of the cluster of ten consecutive shots gives the deviation (right or left) for that particular rifle for the range under consideration.

This firing, it is needless to say, should be done with extreme care and note made of the meteorological conditions.

On a cool, cloudy day the marksman may expect to have to take from 50 to 75 yards more elevation than on a warm day with bright sun.

The enormous pressure in the chamber and the energy expended, cause a gradual wear in the rifling and particularly an eating away of the metal in the chamber.

After from 800 to 1200 rounds have been fired from a rifle there will accordingly be a perceptible reduction in the recoil, and a little greater elevation will be required than under similar weather conditions in the first firings.

This wearing away of the rifling is sufficient to impair the rifle for extremely accurate work after from 1000 to 1500 rounds have been fired. It is still a perfectly serviceable arm for the line of battle, but the expert rifleman, after firing that number of rounds, will probably be obliged to get a new rifle.

Effort is now being made in the Ordnance Department to get a steel for the barrels which can be worked and yet increase the life of the rifle for accurate firing.

The first lot of rifles issued to the army will, however, likely wear about as above indicated.

In the matter of accuracy it may be said that the new rifle is more accurate than the Krag.

In our best records at 300 yards one target of ten consecutive shots could be covered by one's hand (closed) and wrist.

At 800 yards another was covered by a page of legal cap paper.

At 2000 yards the average of a number of targets came inside of an 11-foot square.

The accuracy of the rifle leads to the belief that, with a range finder, or where the ground admits of observing the effect of shots, we may open up on bodies of the enemy at distances greater by several hundred yards than formerly.

NOTE.—It is understood that a knife bayonet, of exactly the same form and dimensions as the Krag bayonet, except that the blade will be 16 instead of 12 inches in length, tempered and ground sharp, will be furnished. It is expected that a metal scabbard lined with wood so as to prevent rattling, and also to protect the edge of the knife will be supplied. No ramrod is to be issued.

As to the omission of the ramrod I would say that in firing 30,000 rounds I never had the slightest use for a ramrod.



HOW MANY MEN ARE NEEDED IN A COAST ARTILLERY ORGANIZATION IN TIME OF PEACE TO INSURE A HIGH DEGREE OF EFFICIENCY IN TIME OF WAR?

By "DEFENSE."

THE tactical organizations of the coast artillery are:

1. The battery.
2. The fire command.
3. The battle command.

The administrative organizations are:

1. The company.
2. The fort or "post."
3. The artillery district.

The administrative organization is secondary to the tactical or fighting organization. To a limited extent they must be called upon for independent operation, and thus far must be provided for separately.

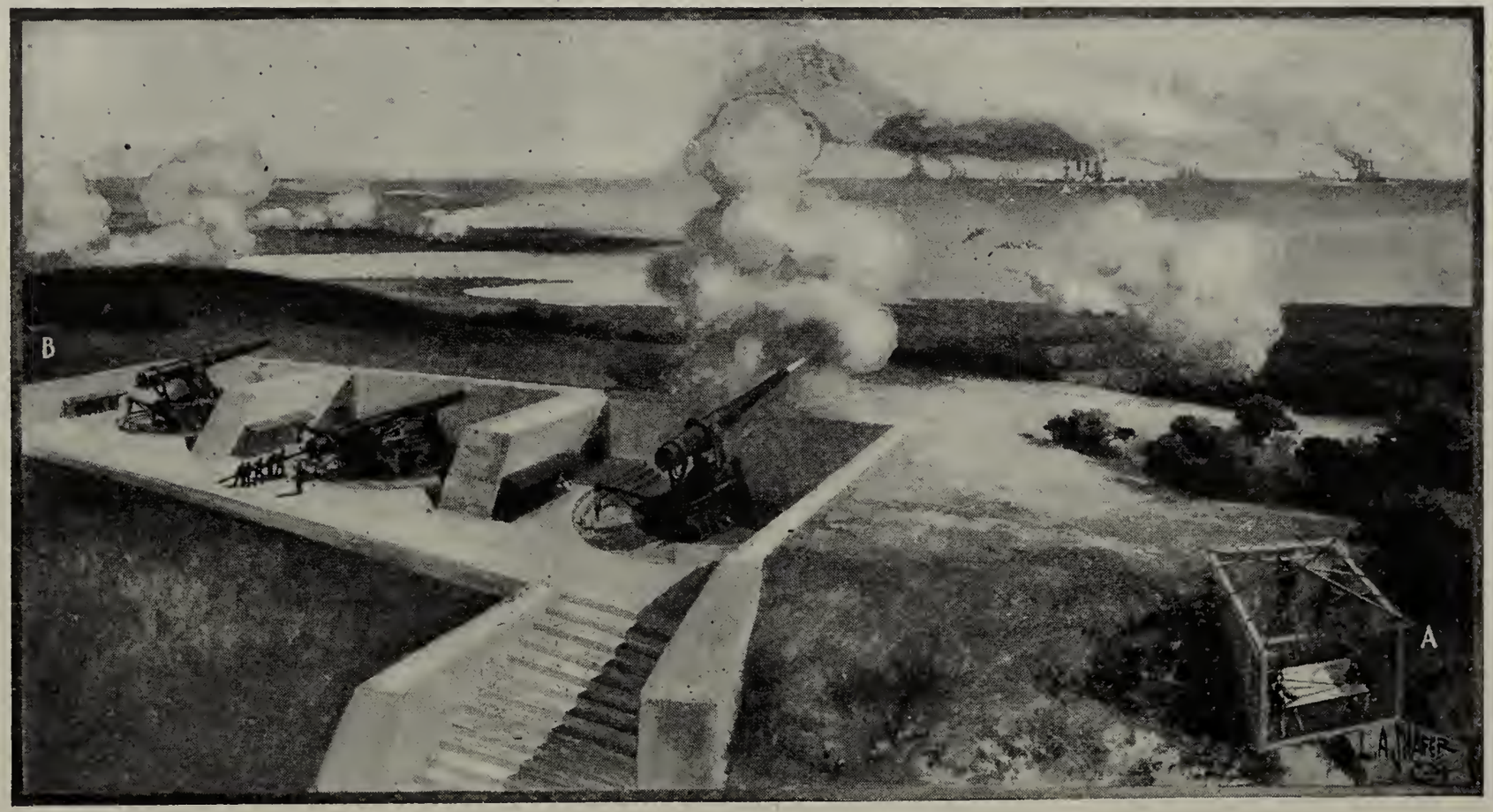
The administrative needs being the less are considered first:

(a) Administrative Organization.

1. *The Company.*—The complement of a battery, that is the men necessary to man the guns, range finders and all accessories, should, as a rule, be furnished by a company. The exceptions are mortar batteries, the complements for which are too large for efficient company administration, and the small rapid-fire-gun batteries, and the position finding systems for fire commands and battle commands, the complements for which are too small for economical company administration.

The standard size for an efficient company has been for centuries 100 men. In coast artillery companies this number should be adhered to as closely as possible, consistent with tactical requirements. Assuming this size for a company, the men needed for administration are:

One first sergeant.
One quartermaster-sergeant.
One clerk.
One cook or assistant for each twenty-five men.
Two musicians (orderlies).
One or more mechanics.



From the New York *Herald*

FIRE CONTROL OF A MODERN FORTRESS.

The mechanics are required to make ordinary repairs at the battery to which the company is assigned. The number of these needed will vary with the character of the battery armament.

Other administrative duties in the company can, as a rule, be performed efficiently by roster without interfering with tactical duties. One officer is sufficient for company administration. Additional officers are needed for tactical duties.

2. *The Fort or "Post."*—The commanding officer of a coast artillery post has his place in the tactical chain of command as battle commander, fire commander, or battery commander, his particular assignment depending upon the size of the armament at his post and its fighting organization. His staff consists of (A. R. 203) the adjutant, quartermaster, commissary, surgeon, engineer officer, ordnance officer and signal officer. General orders also direct the appointment of a submarine-mine officer at such posts as are provided with a submarine-mine equipment. The extent of the duties of the adjutant of a post in time of hostilities will depend upon the size of the command, but will rarely, if ever, be so immediately important as to make him not available for employment in a fight. It is otherwise with the quartermaster and the commissary. These offices can be filled at any coast artillery post by the same officer, but he should not, if possible to avoid it, be diverted from his duties of procurement and issue of supplies and rations. The duties of the engineer officer, signal officer and submarine-mine officer of a coast artillery post are performed by one officer known as the artillery engineer. He is responsible for the operation of all power plants and search-lights. His duties call for his undivided attention. The ordnance officer of a post is responsible for ammunition and ordnance stores not under the charge of the battery commanders. Local conditions and extent of armament will determine whether or not the duties of ordnance officer require the undivided attention of one officer.

A limited number of enlisted men are always needed in post administration, the efficient performance of which will prevent their assignment to stations at the guns.

3. *The Artillery District.*—All the forts, including mine fields and accessories, such as search-lights, position finding stations, and signal stations in each fortified harbor, are organized into an artillery district. As a matter of convenience

some of the minor harbors are attached to neighboring ones of greater importance for artillery-district administration.

The commanding officer of an artillery district has his place in the tactical chain of command as battle commander or fire commander, his particular assignment depending upon the size of the armament in his district and its tactical organization.

The staff of an artillery district commander consists of the adjutant, artillery engineer, ordnance officer, and quartermaster. The duties of each of these officers are usually such as to require all of his attention. In the smaller districts, however, consisting of a small battle command, one or more of the administrative staff-officers may be used for tactical purposes.

The district artillery engineer is in charge of the procurement and issue of all supplies furnished by the engineer and signal departments, and of supplies for the operation of the submarine mine and torpedo defense; he is responsible for the operation of all electric plants and search-lights, and has other duties incident to these.

The district ordnance officer is in charge of all repairs to the armament, including the operation of the district machine-shop, besides the procurement and issue of ammunition and all ordnance supplies.

The district artillery engineer and the district ordnance officer are respectively the only accountable officers in the district to the supply departments with which their duties are connected.

The district quartermaster, while his duties are confined to the management of water transportation, will be fully occupied with the seduties in time of hostilities, and during active preparation for war. The number of boats of all kinds needed at such a time is large, including torpedo planters, picket boats, despatch boats, launches and boats for the transportation of men and supplies to the various garrisons and outposts.

Each district staff-officer will need a considerable number of enlisted assistants, the efficient performance of whose duties will prevent their assignment to stations at the guns. In the large harbors, commissioned officers and civilians may be needed as assistants.

CONCLUSIONS.

An efficient administrative organization for coast artillery in time of war will require:

1. Organization into companies of as nearly 100 men each as practicable, consistent with tactical requirements. On the basis of 100 men to a company, nine enlisted men will be required for administrative duties, and should not be included in estimates of fighting strength.

2. The administrative duties of a post will require the exclusive service of one officer as quartermaster and commissary, one as artillery engineer, and in particular cases, of one as ordnance officer, and one as adjutant. A number of enlisted assistants will be required for these staff-officers, and the estimates for tactical requirements should be in excess of these men.

3. The administrative duties of an artillery district will require the exclusive services of experienced artillery officers for the positions of adjutant, ordnance officer and artillery engineer. An experienced quartermaster will also be needed. Four officers will then be required for artillery district administration.

It is a military maxim that peace administration should be organized and conducted with a single eye to the effective training and preparation of the military forces of the nation for war. If the most effective training and preparation of the coast artillery for war is to be attained, all the officers and enlisted men needed exclusively for the administration of the coast artillery should be provided in peace. This is recognized to a certain extent in the present legal organization of a company of coast artillery, which includes eight of the men stated above to be necessary, namely, one first sergeant, one quartermaster-sergeant, two cooks, two musicians and two mechanics. The additional cooks are, in practice, detailed from that part of the company which a compliance with the spirit of the law makes available for assignment to the guns. Assuming present rates of pay one mechanic would be enough at many batteries; at others, more than two mechanics should be supplied. In practice, the company clerk is obtained as are the extra cooks.

The provision made by law for the administrative needs of forts and artillery districts is a limited number of field and staff-officers of artillery, sergeants-major, post quartermaster-sergeants, post commissary-sergeants, ordnance-sergeants, master electricians and electrician sergeants. Experience has shown that none of these are authorized in sufficient numbers for the absolutely necessary requirements of peace. The result

is that officers are withdrawn from the companies, where they are needed for proper tactical organization and training, in order to perform staff duties which take all of their attention and time. Enlisted men of lower grades than those mentioned are also needed for the most economical administration. These are now obtained by detail from companies.

To justify this claim for a larger number of men for exclusively administrative duties in the coast artillery than are allowed to corresponding organizations in the mobile army, two essential peculiarities in the employment of coast artillery troops must be kept in mind.

1. The coast artillery weapons require detachments for their use. To reduce the size of detachments means reduction of the rate of fire. To reduce the number of detachments means reduction in the number of pieces served. No more guns are mounted in any harbor than are thought essential for efficient defense.

2. Coast artillery troops occupy a carefully prepared position, whose strength and extent is more or less known to the enemy. The enemy's forces (fast battleships and torpedo-boats) are very rapidly moving, and warning of their approach can at best be given but a short time in advance. The fighting force of the defense, that is *the full number of full detachments*, must be constantly in place and fit. In an infantry line of battle, a few rifles, more or less, withdrawn for handling supplies, either will not be missed or can be replaced from the reserves. There are no reserve guns in a coast fortification.

The fighting strength of coast artillery should not then be called upon for purely administrative duties.

(b) Tactical Organization.

1. *The Battery.*— Batteries may be divided into two classes, those requiring a position finding system and those not requiring one. The former includes batteries, mounting guns of six inches and greater calibers, and mortars; the latter, guns of five inches and lesser calibers.

By a position finding system is meant the observing and plotting instruments, the electrical communications (telephones, telautographs, and aeroscopes) connecting the stations in which they are placed with each other and with the batteries, and the method of employing these instruments and com-

munications to assign each battery to a target and to furnish this target's corrected range and direction (azimuth) to the guns at short intervals of time. On account of the great ranges at which seacoast artillery is now employed, the causes which deviate the projectile from its theoretical trajectory have great effect, so great that corrections must be applied to the true range and direction of the target in order to hit at all. These corrections are made on the plotting board by means of various mechanical devices which form part of the system and are capable of very rapid operation.

The smaller guns (five inches caliber and less) are intended for use at relatively short ranges, and such corrections as are necessary to make can be applied on the sight by the gunner, as is done in small arms firing. These guns do not require the elaborate system of position finding necessary for the larger guns. When assigned to a target by a fire commander or mine commander the range should be communicated at the same time.

RANGE SECTIONS.

The personnel assigned to the duty of position finding is called the range section. The range section for the heavy batteries varies in size from seventeen to thirty-four enlisted men when the horizontal base position-finding system is used, and from fourteen to thirty-one men when the vertical base position-finding system is used. This section includes the observers and range readers at the range-finders, the plotters and correction computers in the plotting room, the range keepers at the emplacements, and the telautograph and telephone operators at the range-finding stations and at the guns.

The efficiency of a position-finding system depends upon the speed with which it is operated not less than upon its accuracy. The efficient operation of the present system requires the delivery of complete data for use in laying the guns in each battery at the minimum rate of once every twenty seconds. Once every ten seconds is actually practiced by some companies. With men thoroughly instructed in the method of operating the system, a comparatively easy task, it requires no argument to appreciate that long practice is necessary to co-ordinate the individual operations of fourteen men, the minimum number employed, so as to furnish information at the required rate of speed. Experience has demon-

strated that not only long but frequent practice, daily practice for months, is required to produce the required speed and accuracy, with certainty. Efficient preparation for war requires a complete range section trained in time of peace for each battery provided with a position-finding system. A range section cannot be broken up at the outbreak of war to furnish instructed men for range sections of batteries unprovided with them without serious loss of efficiency. Combined daily practice of the individuals assigned is the most necessary requirement. Mere instruction in method does not occupy much time.

Each fire and battle commander requires a range section of the same degree of skill and experience as is required for heavy gun batteries.

Batteries of five inches and lesser caliber guns need a small range section. These are composed of telautograph and telephone operators and range keepers only. Both classes of men require time to develop. They should be provided in peace.

GUN SECTIONS.

The personnel assigned to the handling of a gun, its carriage and the ammunition service, is called the gun section. The gun section is divided into two principal detachments, each requiring a non-commissioned officer as its chief—the gun detachment for the maneuvering, loading and firing of the gun, the ammunition detachment for the service of ammunition. The gun section is commanded by the gun commander. The gunner is a member of the gun detachment.

The gun section for a mortar pit numbers	68	enlisted	men.
For a 12-inch disappearing gun	34	"	"
For a 10-inch disappearing gun	30	"	"
For an 8-inch disappearing gun	28	"	"
For a 6-inch disappearing gun	20	"	"
For a 5-inch rapid-fire gun	15	"	"
For a 4.7-inch rapid-fire gun	17	"	"
For a 3-inch rapid-fire gun	11	"	"
For a 6-pounder rapid-fire gun	9	"	"

The efficiency of a battery is measured by the hits it is able to make in any given time. This ability depends, so far as the gun section is concerned, upon the rapidity and accuracy with which the guns can be loaded and fired, the rapidity and accuracy with which the gun can be laid from the information

furnished by the range section, the intelligent care and rapidity with which the ammunition can be handled, and, when the position finding system fails, the accuracy and rapidity with which ranges can be estimated. The estimation of ranges is properly the function of an officer, but all gun commanders and gunners should also be carefully trained in this work.

All these functions require not only knowledge but practice, and for high efficiency, long continued practice. The knowledge required of any one individual is not difficult to learn or to impart. Given a perfect position-finding service, a sustained rapidity of fire with a green gun section of one shot in four or five minutes, with a twelve-inch rifle on disappearing carriage, say after a week's training, would be considered good. Any regular twelve-inch gun section in the service to-day can maintain a rate of fire of one shot per minute; the best record is one shot every twenty-seven seconds for four consecutive rounds. Assuming the same conditions with mortars, a rate of fire of one pit salvo (four shots) every five or six minutes for the green section to one per minute for the constantly trained section is about what may be expected. It is the universal experience that even with organized and trained sections, after a winter's absence from actual drill, a month or more is required before officers are willing to even conduct target-practice, so much do rapidity and accuracy of service diminish for lack of actual drill. The daily practice of range sections is kept up throughout the year.

2. *The Fire Command.*—A fire command consists of two or more batteries not in general exceeding four, so located that their fire covers the same or contiguous water areas and that they can readily be commanded in action by one man. In action a fire command will ordinarily be assigned to one target or group of targets at a time. The batteries of a fire command ordinarily are of the same general class of weapon—heavy guns, mortars, long-range rapid-fire guns, or small caliber rapid-fire guns. The latter are usually mounted to sweep the mine field and are included in the "mine command". Among the fire commander's functions are the assignment of particular targets of his batteries, the determination of the order and rate of fire, the time to commence and cease firing, etc. He is assisted by one staff-officer, who is in direct charge of all communications, and by a range section similar in all respects to a battery-range section, one of its functions being the supply

of firing data to any battery of the fire command whose position-finding system is temporarily or permanently disabled.

3. *The Battle Command.*—This includes all the fire commands covering a water area within which a naval attack may be expected, and over which one man may exercise efficient control of the artillery-fire action that may take place therein. Besides the fire commands (gun and mortar batteries) the battle command includes mine commands, direct control of all search-lights of the battle command, power plants, and all material accessory to the service of the armament and the personnel assigned thereto.

The battle commander is assisted by the search-light officer, and an officer in charge of communications, and by an enlisted range section of about the same numerical strength, though of somewhat different duties, as other range sections.

The most important development in modern means of harbor defense is the control of a battle commander. By this means the fire of all the armament in a harbor can be concentrated with crushing effect upon any vessels which may come within the radius of action. Without such ability to concentrate it is not difficult to imagine some success in the approach of a modern battleship squadron at least so far as the mine fields. A successful run past any of our modern fortifications would not occupy more than twenty minutes. It can readily be appreciated what is the necessity of co-ordinated and prompt action on the part of forts to meet such attempts when it is remembered that a present day first-class battleship carries a greater number of guns than are mounted in any but our most heavily-armed forts, and that two such ships carry more guns than any single fort in the United States; and that the advantage of greater accuracy of fire on the part of the fort is rapidly decreasing during the approach and ceases at about 3000 yards range, that the inferior limit of mortar fire is about 3000 yards. The fort must establish and maintain its superiority at the longer ranges. This can never be done by batteries acting individually, at least not any such number of batteries as we have available at any one place to-day opposed to any probable number of battleships which might join in an attack. The prevention of bombardment must rest with the heavy armament. Here again the fire and battle commanders' control is essential to success, as has been publicly confessed by the

Russians in explanation of their failure to prevent bombardments in the early stages of the defense of Port Arthur.

CONCLUSION.

Long-continued practice is essential to efficiency in all the elements of the tactical organization of coast artillery, that is, accuracy and rapidity of fire for each battery, and ability to concentrate and distribute fire quickly and with certainty. The information required on the part of individual enlisted men is not very difficult to acquire. The knowledge required of officers, particularly the fire and battle commanders, is much of it very difficult of retention; it is different in kind, but as great in amount as that of line officers of corresponding grades in the mobile army. Constant practice is the great essential. Without this constant practice no real efficiency is to be expected.

To return to the question how many men are absolutely needed in a coast artillery organization in time of peace to secure a high degree of efficiency in war, the only safe answer is a complete complement for all the armament which it is proposed to use, and for the administrative service of this body.

The ammunition passer requires but a few days to train, but without him ammunition cannot be served. Without ammunition service the gun cannot be loaded. Without loading guns the rate and accuracy of loading cannot be tested or determined, nor can the gunner be tested in rapid sighting of a rapidly loaded gun, nor can the gun commander practice the actual command required to secure rapid service. In a fully manned mortar pit (four mortars) sixty-eight enlisted men are stationed. The area of the pit is only fifty feet by seventy feet, most of which is taken up by the mortars. There are three kinds of projectiles for mortars and eleven kinds of powder charges—thirty-three possible combinations of ammunition. The rate of fire should be a salvo every minute, if desired. The target may be changed in the course of an engagement several times, necessitating a change of kind of powder charge and possibly projectile. While firing at the same target the projectile and powder will often change. Between discharges every man must leave the pit and return to his place. Smokeless powder has not been sufficiently developed to enable its use in mortars except for the larger charges. The danger of confusion in a smoke filled mortar pit has been repeatedly dem-

onstrated at maneuvers, particularly at night. The danger of accident even when firing deliberately has frequently been demonstrated, only recently fatally at Fort Banks. Each one of the sixty-eight men must be separately trained for his particular duty. It would be folly to expect efficiency from these men without long-continued combined training under the most careful supervision.

Without fully manned batteries the fire commander cannot practice concentration and distribution of fire; he cannot properly test his electrical communications by the only practical test, daily use; his range section cannot practice furnishing ranges to batteries whose position-finding system is disabled, nor can the batteries practice that instant response to orders of the fire commander, essential to effective concentration and distribution of fire.

Without fully manned fire commands the battle commander cannot practice giving his orders, nor the fire commands practice obeying them; the efficient use of search-lights cannot be developed, nor can the personnel be trained to see by search-light, which requires considerable practice; the power plants cannot all be operated in unison; in short, a skeleton organization for this work cannot be made effective, every element must be represented and in operation.

The policy of the nation as exemplified by the acts of its Congress is to develop its navy. A navy is not designed for passive defense, but for attack, the best means of defense. The sooner the attack is delivered the better.

If our coast fortifications cannot be relied upon to efficiently protect our harbors, the greater part of the navy will stay at home. We can, without trouble, get plenty of men willing to man our fortifications at the outbreak of war, but they cannot be organized and trained to hit except by long practice. No modern battleship squadron would fear the fire of the best guns in the world manned by amateurs. Congress is preparing to furnish sufficient officers and men to man all of our fighting ships, presumably to enable them to strike quickly and when opportunity offers in case of war. This freedom of action for which so much time, effort and money is now being spent cannot be attained without efficiently fortified harbors, manned by a personnel which can *hit*.

THE SURPRISE OF THE TABOR BRIDGE AT VIENNA BY PRINCE MURAT AND MARSHAL LANNES. NOVEMBER 13, 1805.*

By FREDERIC LOUIS HUIDEKOPER.

(*From the original documents in the Ministère de la Guerre in Paris and the Kriegs-Archives in Vienna.*)

FROM Nussdorf a small arm of the river, known as the "Danube Canal," sweeps in a broad irregular bow southwardly to the foot of the bastions of the inner city, and, continuing on in a southeastwardly direction, rejoins the main channel at Pratereck, opposite the upper end of the island of Lobau.† The "Danube Canal" of to-day occupies almost the identical channel which it did in 1805, but in other respects the river at Vienna differs very materially from its course at that time. In place of the present straight "Donau Durchstich" (Danube excavation), constructed at an enormous cost in 1870–77 to provide a broad channel on the northwestern side of the Prater, numerous islands then diverted the course of the river north of the city into several tortuous estuaries, nearly all of which have since disappeared. The ramifications were especially numerous on the northeast of the Au Garten and in the marshes of what is now the left bank opposite the Prater, and between the two lay the broad but sinuous main channel. At that time the Tabor bridge, constituting with those of Linz and Mautern the only permanent communications between the two banks within the limits of Austria proper, ran in a northwestwardly direction from the present Tabor Strasse to the villages of Jedlersdorf-Spitz and Floridsdorf. Near the site of the modern station of the Northwestern Railway (Nordwest Bahnhof) the road was carried across an

*Continued from the March number of this Journal.

†This point was the scene of Napoleon's desperate attempts to cross the river in May, 1809, in the face of the Archduke Charles. His troops did succeed partly in reaching the left bank, which led to the sanguinary battles of Aspern and Essling (May 21st and 22d), but were forced to retire to the island of Lobau which was converted into an entrenched camp of unprecedented magnitude. Nine days after the arrival of the army under Prince Eugene, Viceroy of Italy, the French successfully debouched from the island (July 5th) and on the following day won the battle of Wagram.

estuary about 150 paces broad by means of an arched wooden bridge conducting to an island 400 paces wide. A bridge, similar in length to the first, led across another estuary to the "Wolfsau" (Wolf's Meadow), an island some 3000 paces in breadth, overgrown with thick copses and dwarfed trees. Across this island the road ran with considerable crookedness northward to the hamlet of Zwischenbrücken, where a wooden bridge of arches, 500 paces in length, carried it over the principal channel to the villages on the left bank mentioned above and there bifurcated, one branch leading to Bohemia and the other to Moravia. The first two bridges were known as the "first and second Tabor bridges" and the last as the "Spitz bridge," although the Viennese termed them collectively the "Tabor bridge." Embracing all its deviations, the length of the road from the right to the left bank at Spitz was about 5000 paces (2⅓ miles) and beyond, at a distance of 2¾ miles, lay Stammersdorf, the headquarters of Prince Auersperg and Baron Kienmayer.

On the morning of the 13th the Austrians had completed their preparations to destroy this valuable communication. The "first and second Tabor bridges" were only partly made ready for burning but the "Spitz bridge" was thoroughly laid with powder and fuses so that it could be set on fire at an instant's notice. The "Tabor bridges" had additionally been protected by a permanent work in the nature of a bridge-head or barrier known as the "Gatterthor"—to which we have previously alluded—and there Lieut. Nicolaus Herbay had been stationed with two non-commissioned officers and seventeen of the Szekler hussars. The keys both of the main and postern gates had been entrusted to his personal keeping and he had been strictly charged under no circumstances to admit any one except the proper couriers and the usual and "extra post" wagons, and not to open to any of the enemy's flags of truce, the arrival of which he was at once to report to his superior, Col. Gabriel Freiherr Geringer von Edenberg, who had been especially detailed with the regiment of Szekler hussars from the Austrian rear-guard to make the final preparations to destroy the bridges. He had established his headquarters at Zwischenbrücken with the bulk of his command and had posted four doubled vedettes between that hamlet and the "Tabor bridges" in order to expedite the correspondence with the 'Gatterthor" and to transmit promptly any signal of the

French approach. In case the enemy put in an appearance or made any attempt to force his way through, the carbineers of Herbay's post were instructed to fire off their pieces and to ride back as fast as possible; upon hearing the discharge of their carbines all the other vedettes were to repeat the signal and the artillerymen stationed at the "Spitz bridge" were at once to set fire to it.*

In the face of such formidable preparations Bertrand, Lanusse and Mossel advanced with seemingly foolhardy courage. Geringer had hoped that he could gallop on ahead and meet either Auersperg or Kienmayer—both of whom he presumed to be on their way to the "Tabor bridge" in answer to the urgent summons which he had sent them—before the French officers, who would of course ride more leisurely, could reach the "Spitz bridge," and that the time thus gained would still permit the bridge to be destroyed, if necessary. Unknown to him, however, Bertrand and his companions had hatched a cunning plot and, far from allowing him to carry out his design, dogged his very steps and reached Zwischenbrücken close on his heels. The artillerymen at the "Spitz bridge" had heard the signal shots and instantly hastened to prime the fuses, but were only prevented from lighting them by the arrival of the hussars which had galloped back from the "Gatterthor" and announced that the colonel was then on his way. They stood nevertheless with matches burning and lanyards in hand ready to set fire to the explosives and to sweep the bridge with grape-shot, and their attitude was so threatening that, in spite of being accompanied by Geringer, the French officers were compelled when only a few paces from the cannon to call out to the gunners not to fire, since an armistice had been concluded and they were going to meet Prince Auersperg. Nothing but the presence of the Austrian officers prevented their being blown into pieces and their courage was rewarded by their reaching the left bank unscathed. Here however an-

*Apropos of these preparations Marbot makes the following excellent comments (Mémoires du Général Baron de Marbot, I. p. 238):—

"When the Austrians defend the passage of a river they have the very bad habit of preserving the bridges over it until the last moment, in order to retain the power of making counter attacks against the enemy who almost never gives them time to do this, and carries by assault the bridges which they have neglected to burn. This is what the French did in the Italian campaign of 1796, at the memorable actions of Lodi and Arcola. Nevertheless these examples could not cure the Austrians of the habit, for after having abandoned Vienna—which was not capable of defense—they retired across the Danube without destroying a single one of the bridges thrown over this mighty watercourse, and confined themselves to distributing combustibles over the flooring of the main bridge, so as to set it on fire when the French should appear."

other hitch occurred, for neither Auersperg nor Kienmayer had arrived nor were they reported to be in that vicinity; but, alalthough considerably perplexed, Geringer resolved to let events over which he had no control take their own course, and, announcing to the French officers that he would conduct them to headquarters, the four at once started for Stammersdorf.

Meanwhile Murat and Lannes had crossed Vienna and the Leopoldstadt at the head of their corps and had reached the "Gatterthor" where a halt was made and the barrier forced open. The two Marshals continued across the "first and second Tabor bridges" and the Wolfsau, their advance completely masked by the retreat of Herbay's detachment and by the tall bushes and thick trees with which the island was overgrown. At Zwischenbrücken, Murat, Lannes and the officers of their staffs dismounted, and their escort—a platoon of the 10th hussars —was posted a short distance in advance at the entrance to the "Spitz bridge." While the Prince sent back an urgent order for the leading brigade of grenadiers, which had been halted at the entrance to the first Tabor bridge, to hasten its march, General Belliard, his chief-of-staff, accompanied by two staff officers, advanced on to the bridge where, with hands crossed behind their backs and conversing with an air of great seriousness, they paced to and fro. Marshal Lannes and two of his officers soon joined their walk which was given every semblance of a constitutional saunter. The length of their promenade in the direction of Spitz was increased with every turn until at last they reached the northern end where the Austrian troops were massed with guns unlimbered ready to sweep the bridge. Their movements had been partly concealed by the detachment of Austrian hussars which had fallen slowly back from Zwischenbrücken before them, otherwise they would undoubtedly have been arrested at the southern end of the bridge over the main channel.* The Austrian commander at first positively declined to receive them, but in view of the *pourparlers*, his difficulties were overcome and he was persuaded to go forward to converse with them. Marshal Lannes repeated what General Bertrand had already told him about the negotiations for peace which had been currently rumored in both armies for some time, assured him that in a few days they would be allies

*De Ségur declares (I, p. 231) that they waved their handkerchiefs, which undoubtedly helped to throw the Austrians off their guard.

and the best friends in the world, and ended by exclaiming: "Why are these guns pointed against us? Do you want to fight us? Come, turn them round, we're friends!" The unwitting commander permitted himself to be duped by Lannes' evident sincerity and immediately gave orders for the guns to be faced in the other direction and for the soldiers to stack their small arms.

During the time gained by this adroit stratagem, the leading brigade of grenadiers had reached Zwischenbrücken and Murat had ordered the first platoon to move forward on to the "Spitz bridge" with such short steps that its advance would be well-nigh imperceptible. In its rear, thoroughly masked, followed a number of sappers and artillerymen who had been instructed to throw into the river all the combustibles with which the flooring had been so liberally strewn, to pour water on the powder trains and to cut all the fuses in such a way as to prevent the destruction of the part already occupied. At the other end of the bridge Lannes and Belliard were doing their utmost to divert the attention of the Austrian elsewhere, but his vocabulary in French was so very limited that the discourse was confined principally to the remarks of the French officers who had great difficulty to "make conversation" sufficiently to keep him from watching this operation. At length he observed the advance of the grenadiers* and endeavored to make it understood that he perceived "that they were marching across the bridge and that they ought not to do so." The French officers hastened to explain "that they were merely keeping in motion and marking time in order to keep themselves warm, because the day was very cold." Evidently satisfied, the Austrian commander permitted the matter to drop *ad interim* until this platoon had managed to get nearly three-quarters of the distance across, but the turn in the road, where it issued from Zwischenbrücken and where the vegetation was comparatively sparse, revealed the rest of the brigade advancing on to that end of the bridge. Captain Johann Bulgarich of the Szekler infantry regiment, who commanded the artillery, was the first to catch sight of these troops and, realizing the stratagem, promptly shouted "*Gunners, fire! fire! The French are com-*

*Marmont declares ("Mémoires du Maréchal Duc de Raguse, II, p. 337) that "an old artillery sergeant brusquely approached the Prince (*sic*) [*i. e.*, the commander] and said to him impatiently and angrily: "General, they're mocking you, they're deceiving you, and I'm going to fire the pieces."

ing!" His troops sprang to their arms, the guns were instantly wheeled into position and in another second the bridge would have been swept from end to end by their grape-shot. But the Austrians had to deal with men whom danger could not daunt nor crisis disconcert, and even before the gunners had time to fire, Marshal Lannes on one side and General Belliard on the other had seized Bulgarich by the collar, Colonel Dodde de la Brunèrie of the French Engineers snatched the match which he was about to apply to one of the guns and choked him vigorously, while all three shouted at the top of their lungs so as to drown his commands. They declared most vehemently that they would hold him responsible for every drop of blood shed, and put on such a remarkably bold front that they finally succeeded in cajoling his superior into countermanding the order to fire.* By a remarkable piece of good luck, at that very instant came the announcement of the arrival of Prince Auersperg and Bertand; Captain Bulgarich was compelled to swallow his wrath with the best grace that he could muster, and the French officers doubtless heaved a sigh of relief as they realized that the critical moment had been averted. A few minutes later Auersperg reached the bridge and, upon inquiring for Murat, was met by Marshal Lannes who had hurried to him. Conformably to Auersperg's request a French staff-officer was at once despatched to Murat to announce that the Austrian prince was coming to meet him, and he was further secretly instructed to proceed with all speed to report the situation to Murat and to give urgent orders to hasten the arrival of the grenadiers. Lannes began his conversation with Auersperg by a most violent complaint against the conduct of Captain Bulgarich and by demanding that he should instantly be superseded and punished; his rank, his vehement expostulations and the authority with which he pressed his inflexible demands completely overawed the vacillating old Austrian Marshal who ended by complying to the extent of revoking all the orders which imperilled the safety of the French. Disconcerted by the confusion which had risen from the intermingling of their officers with the French and by the excited conversations that had followed each other in rapid succession, the Austrians likewise

*Marmont says (II, pp. 337-338) that "The moment was critical; everything was about to be lost when Marshal Lannes with that presence of mind which never abandoned him and that finesse, that instinct of the human heart which is an appanage belonging to the Southerners, called to his aid the Austrian pedantry and cried out: "How is it General, that you permit yourself to be treated thus?] What's then become of the Austrian discipline, so vaunted in Europe!"

fell into the snare laid for them and refrained from firing; but before they recovered from their consternation and before Auersperg had finished protesting against the advance of the French troops—thereby involving himself in a long harangue in which Lannes was astute enough to encourage him and non-committal enough to end by referring him to Murat—Oudinot's grenadiers had charged across the "Spitz bridge," sprung upon the gunners, snatched the matches from their hands and overpowered them. At quarter past one o'clock this most valuable bridge, which might readily have changed the fate of the entire campaign, was completely in the possession of the French who were thereby made masters of both banks of the Danube. The trick had been played, the one trump-card left to the Austrians had been taken, and this comedy of errors was at an end.*

The skill, adroitness and audacity with which the French officers played their rôles in this stratagem deserve the utmost praise, but one must confess that the achievement was marred by a breach of good faith which neither the amazing ingenuity displayed nor the remarkable success obtained can in justice palliate. From a military standpoint alone the immense strategical importance of this great bridge unquestionably justified any method however devious which might gain possession of it intact and without loss of life,† but judged by the standard of pure ethics the means resorted to were far from worthy of officers so intrepid and already so illustrious, and even the French considered them very sharp practice.‡ That the result was accomplished without so much as the wounding of a single man, was mainly due to the conflicting opinions

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*This account which is taken mainly from the Journal de opérations de la Reserve de Cavalerie—as written by General Belliard himself—Murat's report of November 13th, 9 P. M. (*infra* pp. 523-524) and from the evidence produced at the court-martial of Auersperg which is given by von Angeli, "Ulm und Austerlitz," (Mittheilungen des K. K. Kriegs-Archivs), pp. 323–331.

Almost every history of the Napoleonic Wars dwells with more or less stress upon this remarkable capture, the most important being the narratives of officers who were present with the army, such as Dumas, XIV, pp. 29-30; de Ségur, I, pp. 230–232; Savary, (Mémoirs du Duc de Rovigo), I, pp, 44–46; Rapp, pp. 57–60; Ménéval, vol. I, pp. 395, 396; Marbot, I, pp. 237–240. Marmont, II, pp. 336-338; and Jomini, "Life of Napoleon," vol. II, pp. 119–120, as well as biographies such as Thoumas, "Le Maréchal Lannes," pp. 122–126, and Stiegler's, "Memoirs of Marshal Oudinot, Duc de Reggio, pp. 35–37.

The accounts given by Schönhals, "Der Krieg 1805 in Deutschland" p. 139, and Rüstow, "Der Krieg von 1805 in Deutschland und Italien, pp. 285-286, are extremely brief.

†Witness the tremendous losses incurred in May, 1809, when the destruction of this same bridge forced Napoleon to make repeated but fruitless attempts to cross in the face of the Archduke Charles.

‡Compare Marbot, I, p. 240. On the other hand, Thoumas aptly says (Le Maréchal Lannes, p. 126) that "If one now wishes to apply to the conduct of the two Marshals the adage 'The end justifies the means,' it would be difficult to find an action better justified."

among the Austrians, coupled with the lamentable vacillation and lack of foresight upon the part of the weak Prince Auersperg who appears to have subordinated his every opinion to the influence exercised over him by Count Wrbna. During the morning when the events occurred which were to make him forever ridiculous in the eyes of the world and for which he was later deservedly punished,* he had held a conference with F. M. L. Kienmayer and Kollowrath in his headquarters at Stammersdorf, during which Herbay's two reports had reached him. Shortly after midday Herbay had arrived in person to report the events at the "Tabor bridges" and to announce his conviction that the enemy was making undisguised efforts to force a passage. Kienmayer promptly ordered him to "Say to the colonel that he will at once allow the bridge to be burned" but Auersperg overrode him with the announcement; "No I shall ride there myself immediately, for I must first see what Count Wrbna wants to talk to me about. Besides my adjutant, whom Count Wrbna would certainly have sent me in case of danger, has not yet come back."† He was moreover fully convinced that in accordance with the agreement, the French would not occupy Vienna until the return of Gyulai from Napoleon's headquarters, and he was furthermore ignorant that his aide-de-camp had been made a prisoner and retained by Murat upon some trivial pretext, despite his mission as a flag of truce. Just as he was leaving Stammersdorf it was reported to him "that an enemy's column stood on the first Tabor bridge and that Colonel Geringer had crossed the Spitz bridge with Napoleon's adjutant-general." Kienmayer again begged him to order the bridge destroyed but got no more satisfaction than the retort "that he was going to ride there himself and get an explanation from Count Wrbna." Midway to Spitz they met Geringer and Bertrand, and were assured by the latter that an armistice had been concluded, but still Kienmayer exhorted him to have the bridge burned. Colonel Geringer offered to ride back himself and in case of any danger to make the necessary dispositions, but Auersperg could not be brought to realize that there was the least urgency for rapid action and merely replied to Kienmayer's

*Auersperg was first condemned to death but his sentence was subsequently commuted. He was, however, dismissed from his command deprived of the order of Maria Theresa, imprisoned for three years and compelled to pay a large fine.

†During the morning Auersperg had sent his aide-de-camp, Captain Geyger, to Wrbna with a letter, the contents of which are given by von Angeli, pp. 324-325.

proposal that the troops be put on the alert for any emergency, "that he would no doubt order this." Kienmayer then rode off in disgust to have his own troops at least in readiness, leaving Bertrand free to tempt Auersperg with Murat's very alluring proposition to attack the Russians alone, provided the Austrians did not oppose his crossing. The Prince felt his position weaken under the pressure of such an enticement, but suddenly a presentiment dawned upon him that while his attention was being riveted there by trivial things, momentous events might be transpiring elsewhere; he therefore broke off the conversation very abruptly, and brusquely informed Bertrand "that he wanted to communicate in person with Murat." The French aide-de-camp made not the slightest objection and together they rode rapidly to Spitz where they were amazed to find themselves looking into the muzzles of the Austrian guns that had been turned away from the bridge across which the French grenadiers were advancing in close column. In a few minutes Oudinot's troops had reached the left bank and overpowered the Austrian gunners, but when Auersperg made a decidedly vigorous protest, Lannes, having gained complete possession of the bridge—which was all that he wanted—condescended to suspend any further advance and personally accompanied him across the "Spitz bridge" to Zwischenbrücken, where Murat and Count Wrbna were found. Murat overwhelmed him with the delighted exclamation "but it's a complete surprise!" and informed him positively, but at the same time with the utmost courtesy, "that he could not possibly retire his troops; that he was master of the bridge and at the first shot would destroy and take prisoners all the Austrian troops; and that he would grant them an unopposed retreat and would respect their territory only in consideration of the real negotiations for peace then pending." Auersperg confined himself to discussing the unenviable position of Francis and himself, and to expatiating on his own duties. Murat strongly advised his going to Vienna to see Napoleon, whereupon he replied "that he would be glad to greet the Emperor Napoleon" and added "I am more of a Frenchman than you think!" After a conversation of considerable length he set out for Vienna, having first given orders for his corps to retire by the highroad to Moravia and sending an officer to acquaint Kutusoff with the change of affairs, and ending by condemning

heartily the Austrian ministers who had been the instigators of the war.*

When the news of the arrival of the grenadiers at the left bank reached him, the delighted Prince hastened to apprize the Imperial Headquarters of his unqualified success by means of the ensuing report which was entrusted to General Bertrand:

Bridge-head of Vienna, 22nd Brumaire, Year 14. 1.30 P. M.

PRINCE MURAT TO THE EMPEROR.

SIRE:—Your Majesty's troops have taken possession of the bridge at Vienna in pursuance with your orders, and at this moment they are crossing the Danube. I am directing them on Korneuberg, where I hope that they will arrive this evening. From there I shall push them as vigorously as possible against the Russians. In the meantime I am going to make reconnaissance along all the main communications on the left bank of the Danube.

I have the honor, etc.,

MURAT.

During the time occupied by the conferences with Auersperg Oudinot's entire division of grenadiers had crossed the river and were followed in turn by Treillard's hussars, Suchet, Walther and Nansouty, while d'Hautpoul halted in Vienna and was quartered near the Burg Palace; Milhaud's light-cavalry brigade moved from Tulln to Klosterneuburg† and Fauconnet (chasseurs of the Fifth Corps) remained in the villages near Laxenburg to intercept all the communication with Hungary and Italy. Count Wrbna had stayed at Zwischenbrücken after Auersperg's departure for Vienna and made no secret of his opinion of the perfidy with which the French had acted and especially of his extreme regret that Auersperg had been made the victim of such base deception, which caused Murat to reply with no little amusement: "Why, he's a very gallant man, he was not in the least at fault. If anyone was in the wrong, it was perhaps I who did a bit wrong."‡ Shortly afterward the Prince rode across the bridge to Spitz in order to direct the movements of his troops toward Stockerau and to flood his route with cavalry;§ in the vicinity of Spitz he was

*The above account is drawn from the evidence produced at Auersperg's trial—given by von Angeli, pp. 329–331—supplemented by Murat's report of 9 P. M. and the March Journal of the Reserve Cavalry.

†Milhaud did not cross until the 14th (*vide* Murat's second report of 9 P.M. *infra* pp. 523-524) in spite of the erroneous statement in the "Historique du 16e Régiment de Chasseurs," p. 36.

‡Wrbna's testimony at Auersperg's court-martial.

§Pursuant to Napoleon's order of November 12th, 5 P. M. *Vide supra*, March number Journal M. S. I., pp. 286-287.

met by Kienmayer and Colloredo and, upon their agreeing to separate from the Russians, Murat promised not to fire on their troops without a previous warning. Part of the Austrians remained to assist in guarding the northern end of the bridge but the bulk of Auersperg's corps fell back along the road to Poisdorf and took position in the neighborhood of Wolkersdorf (headquarters). Thanks to the negligence of its commander, Colonel Theiss, Quartermaster-General, the entire Austrian Reserve Artillery remained at Gerasdorf in total ignorance of the retreat of the corps, was completely surrounded and compelled to surrender to the French next day in spite of Murat's promise. Marshal Lannes and General Walther established their headquarters at Korneuburg with the grenadiers and the dragoons, of which the 3rd brigade (Boussard) was sent on to Stockerau to obtain news of Mortier,* while Lang-Enzersdorf and Strebersdorf were respectively occupied by Suchet and Nansouty, both of whom posted strong guards at the bridge. It was dark before Murat rode back to the city where Belliard had established his headquarters near the Kärtner-Thor in the palace of the Archduke Albert of Sachs-Teschen, appointed General Hulin Governor of Vienna and hastened to send off the two ensuing reports:

PRINCE MURAT TO THE EMPEROR.

22nd Brumaire, Year 14.

SIRE:—As I had the honor to report to Y. M., the city of Vienna is occupied, and by the aid of a slight trick we made ourselves masters of the bridge. Generals Bertrand and Mossel and Major Lanusse, my aide-de-camp, had been commissioned to get possession of it and had marched to surprise it at the head of the 9th and 10th regiments of hussars and the 10th and 22nd dragoons and three pieces of cannon. They advanced so rapidly, and the barrier which closed the road before them some distance in front of the bridge, was surrounded so quickly, that two vedettes which had been placed there had barely time to flee, after having fired shots from their carbines into the air. Upon reaching the bridge the hussars succeeded in stopping a man who was going to set fire to the contrivances strewn from one end to the other. Since it had been seen that if the troops advanced the burning would begin from the direction of the left bank,they were made to halt, and Messrs. Bertrand, Mossel and Lanusse advanced alone. They were about to be riddled by grape-shot had they not cried out to the gunners, from whom they were not more than four paces, that they were going to Prince Auersperg who had that morning asked for an interview with me. They were allowed to pass. At the same instant I arrived after having crossed the city at head of the division of grenadiers. Marshal Lannes, who accompanied me, forthwith moved with

*Compare Picard, "La Cavalerie dans les Guerres de la Révolution et de l'Empire." I. p. 294.

several officers to the opposite end of the bridge. While they chatted with the Austrians and sought to persuade them that they ought not to oppose our crossing, I caused a brigade of grenadiers to file (on to the bridge). Seeing it advance, the Austrians again wanted to fire, but the firmness of Marshal Lannes overawed them and once again prevented their firing the cannon. In the meantime Prince Auersperg arrived and demanded to see me. He talked with me about his duties; I talked with him about his position and that of his master. Meanwhile the grenadiers finished crossing, and by his orders the Austrians retired by the road to Brünn. Prince Auersperg seemed to me an excellent man; he told me that he would be happy to greet H. M. the Emperor Napoleon and added, "I am more of a Frenchman than you think." He left me, cursing the ministers who were the authors of the war. Generals Kienmayer and Colloredo came to see me; they promised me to separate from the Russians, and upon this condition I promised them, in my turn, not to have them fired upon without warning them. I am free to have them told, when it shall please Y. M. so to order, that this species of truce is broken * * *

I have the honor to be, Sire,

Your Majesty's, etc.,

MURAT.

HEADQUARTERS OF VIENNA, the 22nd BRUMAIRE, Year 14, 9 P. M.

The second report informed the Emperor that General Hulin had been appointed Governor of Vienna and General Macon of Schoenbrunn; that the troops were established in Vienna awaiting the arrival of the Third Corps; and that Fauconnet and Milhaud would cross the Danube on the following day.

Murat doubtless went to sleep that night with a feeling of extreme satisfaction and a pleasing conviction that the remarkable success achieved would immediately reinstate him in Napoleon's good graces and far more than compensate for the Emperor's erroneous belief that he had blundered in rushing on the army to Vienna. His former misgivings were replaced by joy, and early next morning Napoleon's expressions of delight again restored him to his normal buoyant spirits.

In the rear of the vanguard of the Grand Army the arrested movement gave place to a general advance by all the army corps. The headquarters of Marshal Davout were carried from Heiligenkreutz to Moedling, and that night the Third Corps occupied the various villages in close proximity to Schoenbrunn, extending from Hetzendorf and Inzersdorf south through Baden to the Treisting. The Third Dragoons, which had formed the rear-guard throughout the march from Steyer, continued from Fahrafeld to Baden, thence north on the heels of Viallanes and Heudelet, and that night formed the

link which connected Caffarelli and Gudin with them, by occupying the triangle Biedermannsdorf—Kalksburg—Vösendorf (headquarters) where General Beaumont lay ill that night with fever and hemorrhage contracted as a result of the hardships of the march through the Styrian Alps, and much to his bitter disappointment was forced to remain there and to relinquish the command of his division to General Boyer of the 1st brigade.* By order of Marshal Davout the advanced-guard was disbanded and General Heudelet returned to the command of his brigade taking with him the 108th of the line and the 1st chasseurs (Montbrun)†. Established in the very suburbs of Vienna, which some of his troops entered next day, Davout's long and arduous march across the mountains was at an end. The energy, skill and judgment shown had effectually annihilated Merveldt and practically eliminated him as a factor of any importance from the campaign. Few men without the stern determination of this Marshal could have accomplished such a result under similar difficulties or with such quick despatch; a capital instance of the rigid discipline enforced among his troops and the strict probity demanded by Davout who, if he never spared others, was no less exacting upon himself, occurred during this march and is too characteristic of him to be omitted. The Marshal had observed the brilliant Montbrun charging at the head of his regiment (the 1st hussars) and directing with unusual skill and self-possession the movements of the advanced-guard during the fighting before Mariazell, and had formed a high regard for his soldierly talents. He was accordingly very much provoked when his aide-de-camp, Captain Trobriand, handed him a letter from a princess whose estates the troops had traversed complaining that the officer commanding his vanguard had levied upon her a contribution of several thousands of francs and relying upon Davout whose reputation for justness had preceded him to punish the culprit. Upon receiving this complaint the aide-de-camp warned Colonel Montbrun that in an hour it would be in the Marshal's hands, so that he was fully prepared when summoned to Davout's headquarters, In the presence of all the generals of the corps the Marshal administered a severe reprimand and ordered a complete restitution by Montbrun of the entire amount of the levy, adding, "If I had two men like you

*Journal des Marches de la 3e division de Dragons.

†Compare "Vie militaire du Lieutenant-Général Comte Friant," p. 96.

in my army corps I should have one of them shot as an example!" Montbrun readily recognized the praise contained in this thinly-veiled threat, and with the greatest *aplomb* flatly denied the truth of the act attributed to him, but the accusation had nevertheless been made in a formal manner and Montbrun would have found himself in a very unenviable predicament had not the major of the regiment hastened to demonstrate the extent of his devotion to his colonel by announcing that the blame rested, not on Montbrun, but upon himself alone. The entire affair was hushed up by feigning to believe him and by subjecting him to several days' arrest, but a salutary lesson had been administered and neither Montbrun nor anyone else in Davout's corps dared to raise any further contributions until the end of the campaign.*

It is unnecessary to discuss here in detail the various movements of the other corps; suffice to say that the Guard advanced from St. Poelten to Purkersdorf (thirty-one miles) thereby passing the divisions of Legrand and Vandamme which were joined that night near Sieghardskirchen by Marshal Soult and the cavalry of the Fourth Corps from Göttweig and Mautern, followed by the 1st division (Saint-Hilaire) to Herzogenburg. In the rear of Soult the First Corps remained in its former positions and Marshal Bernadotte got ready to cross the left bank, while farther down the river Marshal Mortier began to transport his troops back over the Danube but, having at his disposal only twenty boats belonging to the flotilla under Captain Lostange and an insufficient number of boatmen, he was able to put Dupont's division alone on the left bank that day, and although the operation was continued throughout the 14th and the night of the 15th–16th it was not until 10 A. M. on the 16th that Gazan and Dumonceau were got across the river.

We do not purpose to follow the details of the busy and anxious day spent by Napoleon. During the morning General Lemarois reached St. Poelten and gave a full account of the position and condition of Mortier's corps, and when a report was received from Marshal Soult the Emperor decided that Bernadotte and Mortier constituted a sufficient body to force a crossing and keep the Russians harassed until Murat had blocked their retreat from the east. His plan was therefore outlined to Bernadotte† and Mortier, the flotilla was placed at

*Chenier, "Vie du Maréchal Davout," 149–150, and Thoumas, "Les Grands Cavaliers," I, pp. 130–131.

†Berthier, No. 387, pp. 273–274, and Napoleon, Corresp., No. 9474, 11, pp. 396-397.

their disposition, and Saint-Hilaire was ordered to leave Mautern for Vienna.* The 22nd Bulletin issued† Napoleon set out for Purkersdorf, but at Sieghardskirchen he was met by a deputation which had been sent by the various Viennese bodies to present to him the keys of the Austrian capital and to surrender the city to him in the name of their sovereign. Shortly after reaching Purkersdorf General Bertrand was announced, and when this efficient and faithful officer delivered Murat's report of the capture of the bridge at Vienna and gave him a detailed account of the manner in which this success had been achieved, Napoleon's delight knew no bounds.‡ The possession of this strategically invaluable crossing permitted him to utilize the "interior lines", as he had so effectively done in 1796 and 1797, and from his centralized position to operate at will against either Kutusoff or the Archdukes coming up from Italy. The incalculable advantage thus gained set his mind at rest for the remainder of the campaign, for the Emperor then felt assured that he could readily prevent the junction of the Allies and could successively defeat them in detail. His foresight had long before grasped all these advantages, and when the assurance came that his fond hopes had been realized in full it is small wonder that he was delighted. After dictating instructions to Marmont,¶ Davout and Mortier,§ Napoleon, "in transports of joy," then hastened on, almost alone, to Schoenbrunn where he betook himself to the imperial palace of the Holy Roman Emperors.** The first conqueror to set foot within the capital of the Austrian Empire for more than 500 years, he alone had realized the dream of the brilliant and audacious Villars—a dream in which the more practical Vauban had shared but which they both had ultimately become convinced was merely a fictitious chimera impossible of fulfillment.†† But the greatest general of all ages had a strange knack of turning the dreams of others into realities for himself —he who was the most fanciful dreamer of them all. Not this once alone, but again four years later did he gain possession of Vienna and occupy this picturesque château, with its extensive

*Berthier, Nos. 388, 389 and 390, pp. 275–276.

†Napoleon, Corresp., No. 9476, 11, pp. 399–401.

‡Dumas, XIV, p. 30; de Ségur, I, p. 232; Rovigo, I, p. 46.

¶Napoleon, Corresp., No. 9475, 11, pp. 398–399.

§Berthier, Nos. 391 and 392, pp. 276-277.

**De Ségur, I, p. 232.

††Dumas, XIV, p. 224, 4th Note, "On the conquest of the Tyrol and the junction of the two French armies of Germany and Italy."

gardens and walks, bordered by statues and by splendid trees and hedges trimmed square and box-like in the style of Le Nôtre, and its columned gloriette perched up against the sky; but little did he dream that destiny should decree that his own son, the future King of Rome, should spend so many hours in this outlook gazing yearningly over the gray city, the blue river and the distant Wiener-Wald back toward France while he remained a helpless prisoner until his death (July 22d, 1832) in this Imperial dungeon from which his mighty father had twice humbled the proud Hapsburgs. "*Tempora mutantur et nos in illis mutamur*" and nowhere in history in the truth of that proverb better exemplified than in the treatment meted out to the unfortunate "eaglet" by the affectionate but calculating old grandfather and the implacable Metternich in revenge for their utter impotency in the presence of the living Napoleon. But the "Eagle Emperor" beat out his life chained to a lonely rock in the Atlantic "a thousand miles from anywhere," and the sins of the mighty father against Austria were visited upon the son who resembled him only in the greatness of the name he bore.

During the course of the evening the Emperor sent off de Ségur to carry the order to Marmont and was made fully acquainted with the details of the capture of the bridge through the two reports from Murat. Napoleon had never before been in Vienna and his delight, like his anger that was aften manifested by extreme impatience which required an outlet in physical action, caused him to leave Schoenbrunn about midnight and to ride rapidly through the city accompanied by some of his staff. At the "Tabor bridge" he was met by Murat who had been informed of his coming and his congratulations, which were quite as hearty and enthusiastic as his reprimand had been severe, at once restored the Prince to his customary exuberant spirits. Together they proceeded across the "Spitz bridge" and at 2 o'clock the Emperor made the rounds of the outposts for the purpose of learning the exact positions of his troops and of ascertaining whether the outpost duty was being properly performed. Orders were given to hasten the advance of Murat and Lannes in the direction of Znaim for the purpose of intercepting the Russians retreating from Krems, and Count Gyulai, who had been left at Purkersdorf and who had set out from that town shortly after the Emperor's departure for Schoenbrunn in order to rejoin Francis at Brünn, was dumb-

founded to find Napoleon at the very front of his army warming himself before a bivouac fire in the cold gray of the dawn and intently watching the march of his troops toward Moravia where they were to suffer so many hardships and where so many brave men were destined to die that even the soft-sounding name of that province gave rise among the soldiers to a sinister play on the word (mort-à-vie).* Shortly after the day broke the Emperor returned to Schoenbrunn, stopping for a short while only in Vienna whose inhabitants were greatly surprised to see him enter the city by the Danube gate.

On the 15th Murat and Lannes reached Ober-Hollabrunn, attacked and captured 100 of Kutusoff's train wagons, but the wily Russian, finding that his exhausted troops were compelled in order to gain the road to Znaim to move along the arc of a circle while the French advanced along the chord, resorted to a subterfuge to extricate his imperilled army; he therefore asked to surrender and sent General Baron Wintzingerode, one of the Tsar's aides-de-camp, to arrange the terms with Murat who readily fell into the trap laid for him. Wintzingerode and Belliard arranged an armistice by virtue of which Murat agreed to suspend his advance and the Russians to evacuate the Austrian dominions but both armies were to remain stationary until the compact had been ratified by Napoleon. In transmitting the agreement to the Emperor, Murat wrote :

"Sire—I thought that I ought to consent to this capitulation since I consider it as the preliminaries of peace which I know is the object of your desires (and) because I was not ready and because this army would have escaped me during the night.† * * *"

Murat's aide-de-camp reached Schoenbrunn shortly before 8 A. M. on the 16th but Napoleon immediately comprehended the plot and vented his righteous indignation upon Murat who was ordered to "break the armistice on the spot and march against the enemy."‡ During the time consumed in sending the agreement to Schoenbrunn and the arrival of General Lemarois at Ober-Hollabrunn at 3 P. M. with the Emperor's reprimand, Kutusoff had continued his retreat through Znaim to Lechwitz, covered by Prince Bagration who was left at Schöngrabern with about 6000 troops to be sacrificed for the safety of the bulk of the army. At 4 o'clock Murat, Lannes and Soult

*Memoirs of Baron Thiébault, vol. II, p. 141.

†Murat to Napoleon, Ober-Hollabrunn, November 15th.

‡Napoleon, Corresp., No. 9497, 11, pp. 415-416.

attacked Bagration who made a splendid resistance against overwhelming numbers but by 10 p.m. was almost annihilated. Napoleon reached Ober-Hollabrunn that same night and hastened the pursuit with feverish activity, but, although a large number of prisoners were captured and although the French cavalry reached Brünn, the capital of Moravia, on the 19th, Kutusoff made good his escape and near Olmütz united with the army under Buxhoevden and the Austrians under Liechtenstein. Except for a few insignificant engagements there were no active movements from the 20th until the 27th when the Allies began their ill-timed advance from Olmütz in five columns. On the following day they came into contact with the French army in front of Wischau and Austerlitz, and on the 29th the Grand Army fell back to a position along the Goldbach, which had been carefully reconnoitered by Napoleon, who on the 21st had warned the officers accompanying him to "look at this thoroughly; study this ground, for within a few days this will be your battlefield."* Urgent orders were sent for all the troops within the theatre of operations to concentrate in front of Brünn and on December 2nd was fought the celebrated battle of Austerlitz, the most decisive battle of modern times† which inaugurated a new era in tactics. The result was the practical annihilation of the Allies, who lost enormously and were pursued until the 6th, when an armistice put an end to hostilities. Alexander withdrew his demoralized forces to Russia, leaving his ally in the lurch, and the Treaty of Pressburg (December 27, 1805) mulcted Francis of 28,000 square miles of territory and 3,000,000 subjects.

We can only speculate what might have been the result of this masterful campaign in Moravia, which was the logical sequence of the long march down the Danube, had the Austrians held the "Tabor bridge" as they did in 1809 instead of falling an easy prey to the audacity of Murat, Lannes and Bertrand.

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*Dumas, XIV, p. 65; de Ségur, I. p. 239; Rovigo, II, p. 51; and Napoleon's notes to Kutusoff's official report which was published in the Court Gazette, St. Petersburg, February 20th (March 4th), 1806.

†"I have fought thirty battles like this one, but I have never seen one in which the victory was so decided and the destinies so little balanced." Napoleon, Mémoires.

THE TEACHING OF MILITARY HYGIENE.

By Brig.-Gen. ALFRED A. WOODHULL, U. S. A. (Retired).

AS long as the army retains a receptive mind we may hope for true progress. That we are still willing to learn, there is happy evidence in the official doubts that are arising in relation to the equivalence of a sharpened cleaning-rod with a good bayonet, and in certain other retrogressions from "advanced" positions. The reports that are drifting across the sea of the practical sanitary work in the Japanese Army show that the claims of theorists are not futile, and that there is such a science as military hygiene and such an art as applied sanitation. If we are not again to be engulfed in the sloughs that Camp Thomas, Camp Alger and the lines before Santiago represent, misfortunes whose memories are worse than that of Valley Forge, because at Valley Forge poverty and anxiety were unavoidable allies of cold and disease, we must carry out, as well as speculate upon, these essentials. Military hygiene has been practiced in a rule-of-thumb and imperfect way for a long time, and the failure to teach it effectively to those directly interested, except at one station, has been clearly shown in Captain Traub's recent essay. But the teaching at that station appears to be so practical, so directly applicable to actual or probable conditions, that this opportunity is used to invite attention to it. For a study of some of the questions set in the last examination papers at the Infantry and Cavalry School at Fort Leavenworth should show the service at large not only what is being done there, but what should be done wherever officers are under instruction.

In order to practice sanitation, those who command troops must understand why some ways are right and others are not, and they must learn to avail themselves of one class and to discard the other; and especially to appreciate that the subject is not a mere jumble of disconnected facts. It is well enough not to bother an enlisted man, or a second lieutenant for that matter if he should not be curious, as to why a soldier steps out with his left foot, so long as he does it; but the lieutenant, if not the company cook, should understand the reason for im-

mersing beef in boiling water and presently reducing the temperature, and the captain, if not the first sergeant, precisely why in a camp of position the tents should be changed to alternate sites at frequent intervals. That is to say, it is for the officers to know what to do and why it should be done. It is sufficient for the men to obey, although for them also to appreciate the reasons would be better. It is because the Leavenworth questions put the matter concretely that attention is invited to them. They do not call for a quantity of unrelated truths, still less for a mechanical exercise like the multiplication table, or an effort of memory such as the campaigns of Marlborough would involve. They simply assume a condition that may happen at any time with active troops, and ask what are you going to do? And that is the essence of true teaching for a practical subject. No one interested in the welfare of the army can read these questions carefully without realizing that the knowledge they imply must be acquired somehow; and there are few officers who will not admit that, if they have learned such lessons at all, some of them have been gained through mortifying experience, often at the expense of those officially dependent upon them.

"As constructing quartermaster what would you have to consider from a hygienic standpoint in the selection of the site of a post, including character of soil, air, moisture, area; what in the construction of barracks, including materials, plan, size, foundation? With reference to barracks * * * discuss the following subjects: ventilation; dangers to health from inadequate ventilation; disposal of products of expiration and combustion; air and floor space; fresh air required, and how obtained."

There are plenty of object lessons in timber and masonry to demonstrate what should not be done. I have served in garrison where in permanent stone structures forty-two men lived in a squad-room forty feet square by ten feet high. Had the company been larger, the additional men would have been quartered in the same space—there was no other, it was the quarters for the company, great or small. There would have been floor-space enough had the bunks been properly arranged, but these were two-story double affairs set along the walls. (In a similar just vacated room a troop had lived with three-tiered bunks.) The air-space per man was about 380 feet, and

sixty men would have received 266 cubic feet. The presumed ventilation was by means of three trap-doors, each two by three feet, opening into a loft which communicated with the outer air by a series of apertures under the eaves of one front. These trap-doors were under the control of the men, and in cold weather were entirely or partly closed by them. A simple form of ventilating shaft, easy to introduce, which should have improved the conditions, was not approved by the post quartermaster and therefore nothing could be done. This particular error is not likely to be repeated, but the principles governing air-space and ventilation have frequently been violated since then and it is possible that they may be in the future. And company commanders wonder why their men have sore throats, which means tonsillitis. Nor is consumption altogether unknown.

"You are commanding a camp of mobilization in a warm, limestone region of the United States, rock being near the surface. The ground is well wooded and usually is dry, but severe rainstorms are frequent. There is ample water-supply and food, tentage, clothing and medical supplies are adequate. Prepare a memorandum covering the sanitary arrangements required to safeguard the health of the camp, and state the sanitary precautions which should be taken to maintain the command at the maximum of health.

"A division of raw troops has been in this camp for six weeks. The usual contagious diseases, mumps and measles, exist and the command is extensively infected with typhoid fever. The division commander requires of you a sanitary inspection of the camp. Set forth, as if they actually existed, such sanitary defects as are liable to be found under the above conditions and state what means and methods should, in your opinion, be applied to correct them."

The hypothetical conditions very closely approach those at Chickamauga. If the regimental, brigade and division commanders had been drilled in this kind of exercise would Camp Thomas have acquired its unfortunate reputation? Would one regiment, for example, have been allowed to remain in a camp whose site was lower than its own sinks, so that it received their contents by overflow after heavy rains? Would the want of proper general police in another have made it almost impossible to walk in the vicinity without one's feet becoming polluted? The officers responsible for such conditions simply did not know

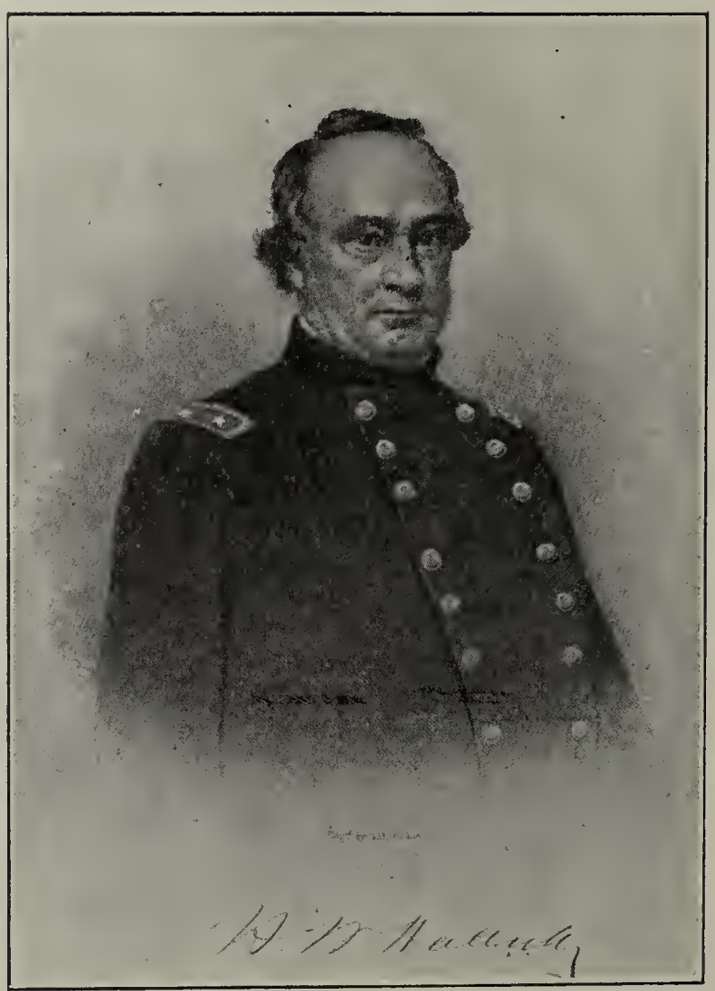
what sanitary sins they were committing, for it is incredible that they would have subjected their men to the resulting disabilities. The first of these, with an average mean strength of 1004, had 338 cases that were probably typhoid fever; the second, with a mean strength of 1015, had 270 probable cases of that disease. These are not exceptional instances, and the record of that great camp shows pretty nearly every possible violation of sanitation, partly by the ignorance of those directly concerned and partly because demonstrable and probable errors were not corrected when brought to the notice of competent authority.

It cannot be necessary to quote the whole paper. The examples given show its scope and manner. What it is desired to impress is that the principles of sanitation should be taught as those of a living subject, taught so that practical deductions may easily be made. When taught in that way it is necessarily an interesting and a profitable study for those concerned with the men by whose continued vigor alone military service is rendered.





Historical Miscellany.



HENRY WAGER HALLECK,

GENERAL-IN-CHIEF U. S. ARMY.

1862-1864.

TYPES AND TRADITIONS OF THE OLD ARMY.

II. GENERAL HALLECK—A MEMOIR.

By General James Grant Wilson, U. S. V.

IN the year 1634, the patriots John Pym, John Hampden and Oliver Cromwell, aboard a fleet of eight small ships on the Thames, and at Yarmouth, the Rev. John Twings and Joan, his wife, of "St. Margaret's, Suffolk," were "forbidden passage," to New England. Soon after, this clergyman was settled at Hingham in Norfolk County, adjoining Suffolk, about one hundred miles northeast of London. Several years later the Rev. Mr. Twings, with twelve heads of families, fled from civil and ecclesiastical oppression in England, and landed at New Haven, Connecticut. There in October, 1640, Twings gathered his church anew, under the auspices of the Rev. John Davenport and Theophilus Eaton, governor of the New Haven Colony, which had been planted two years earlier under a branching oak—a virtual theocracy, the Bible being their code of laws, civil and ecclesiastical. In the same autumn the clergyman and his company settled at Southold on the northeastern shore of Long Island. When the ship sailed in the harbor of what is now known as Peconic Bay, the passengers, numbering about sixty, were afraid to land for fear of the Indians; but Peter Hallock or Halleck, a bold and handsome man of great strength, stepped ashore first, so the place was called "Hallock's Neck," and the beach extending from it "Hallock's Beach," by which names they are still known. Near the ancient Hallock homestead is the Mattituck burial-ground, where may be seen the graves of General Halleck's great, great and great grandfather, Peter Jr. and Major Peter, whose eldest son fell as commander of an armed vessel in the war of the Revolution, before the British ship surrendered. The general's grandfather, Jabez, born in the Southold homestead, moved in 1799 to Westernville, Oneida County, New York, where he died September 17, 1863, in his one hundred and third year. His son, Joseph, served in the second war with England with the rank of lieutenant, married a daughter of Henry Wager of Utica, was for thirty years a magistrate of Oneida County, and died June 22, 1857. He was the father of Henry Wager Halleck who, with the possible exception of his kinsman, Fitz-Greene Halleck, among the earliest American poets of the nineteenth century,* became the most distinguished member of the family. The

*The General felt much pride in the poet and his productions. From San Francisco he sent in 1868, a liberal subscription to his monument at Guilford, Conn., and three years later, he wrote from Louisville, Ky., where he was then in command: "Accept my sincere thanks for your

son was born at Westernville, January 9, 1815, receiving the rudiments of his education at the Hudson New York Academy, to which he had been sent by his grandfather Wager, one of the electors of Thomas Jefferson, by whom he was adopted, the boy having run away from home because he did not like plowing fields and other farm labors which his father required of him, and determined to acquire an education. The only record of Halleck's youth that we have met with—except a few family letters—is to be found in communications sent from West Point and Washington, to Theodore Miller, one of his schoolmates at the Hudson Academy with whom he corresponded for several years, and who, as his nearest friend, went to New York to see him off when the young officer sailed for California in 1846.* Young Halleck entered the junior class of Union College, Schenectady, September, 1854, remaining during the college year. He was one of five students, who in that year won the maximum mark in all their studies and also for attendance and conduct. A college official writes under date September 3, 1902: "I cannot tell where he spent 1835–6, perhaps at some other college. However, Halleck received his degree of A.B. in July, 1837, and his name appeared in our catalogue as with the class of 1837. His guardian was David Wager, and his residence Utica, N. Y. He was elected a member of the Phi Peta Kappa Society. Whether this occurred at the time of his graduation or later as an honor, I do not know. General Halleck received the degree of LL.D. from Union College at the commencement of 1862."

Having received an appointment as a cadet at the United States Military Academy from Beardsley, then a member of Congress representing the Oneida County district, Halleck entered that institution July 1, 1835. He was very quiet and studious; was soon recognized as likely to be graduated among the five honor men, became first sergeant, and later captain, of Company "C." His friend and brother-in-law, Gen. Schuyler Hamilton, writing in September, 1902, says: "Halleck was my roommate at West Point for two years, and he was very kind to me. We never had any disagreements. He had few intimate friends, but they were of the best." When the class of 1839 was graduated, in July, Halleck stood number three, those above him being the gallant Gen. Isaac I. Stevens, of Massachusetts, killed in the battle of Chantilly, September 1, 1862, and Robers Q. Butler, of Virginia, Principal Assistant Professor of Engineering at the Acad-

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delightful biography of my poet-kinsman, which Mrs. Halleck and I have read with unflagging nterest. Should you carry out your pleasant prospect of erecting a bronze statue to him in Central Park, I shall expect to be among the contributors, and also to be present with my wife at its unveiling as you suggest. * * * Alas! how many of our army friends have passed away since our first meeting at Pittsburg Landing."

*Miller studied law and practiced in Hudson, later becoming a judge of the Court of Appeals of New York, from which position he retired in 1886. He died in Hudson in 1895, having survived Halleck twenty-three years.

emy, who died at sea December 3, 1843. Among his other thirty-two classmates, of whom there is now no survivor, were Generals Canby, Ord and Ricketts, prominent commanders in the armies of the North during the Civil War. Gen. A. L. Mills, superintendent of the Academy, has favored me with the following record of the general-in-chief's career at West Point:

HENRY WAGER HALLECK was admitted July 1, 1835; graduated July 1, 1839. He was promoted second lieutenant, Corps of Engineers, and during his cadetship his standing in the classes was:

1st Year, June, 1836, 4th Class.

Mathematics	3	Class of 57.
French	9	
Conduct	17 (out of 216)	
General Merit	4	

2d Year, June, 1837, 3d Class.

Mathematics	4	Class of 39.
French	12	
Drawing	12	
Conduct	15 (out of 211)	
General Merit	5—was a corporal.	

3d Year, June, 1838, 2d Class.

Natural and Experimental Philosophy	3 (out of 218)	Class of 33
Chemistry	2	
Drawing	11	
Conduct	1	
General Merit	3 was a first sergeant.	

4th Year, June, 1839, 1st Class.

Civil and Military Engineering	3	Class of 32.
Ethics	3	
Infantry Tactics	4	
Artillery	4	
Chemistry, Mineralogy and Geology	4 *	
Conduct	2 (out of 231)	
General Merit	3	

Halleck was an Assistant Professor of Chemistry during his 1st-class year and after his graduation he was Assistant Professor of Engineering from July 6, 1839, to June 28, 1840.

The most successful students at the United States Military Academy are not infrequently outstripped in later life by their slower and less showy comrades. What was the West Point standing of many of our most illustrious soldiers of the Civil War, several of whom may safely be included among the great commanders of the nineteenth century? Grant was graduated number twenty-one in a class of thirty-nine, of whom Samuel G. French is the only survivor; Sherman number six among forty-two graduates; Sheridan number thirty-four in a class of fifty-two; the noble Virginian, Thomas, number twelve

*In determining standing in "conduct," the Corps of Cadets was considered as a whole, and each student was given his number in order of merit irrespective of class.

among forty-two classmates; Meade, hero of the decisive battle of the war, number nineteen in a class of fifty-six; heroic Hooker number twenty-nine among fifty comrades; "Stonewall" Jackson number seventeen: Sedgwick, twenty-four in a company of fifty; Longstreet, of Georgia, sixty in a class of sixty-two; Pickett, of Virginia, at the foot of his class; and handsome Hancock number eighteen among twenty-five graduates. From these examples, that might be indefinitely extended among almost four thousand cadets graduated from the academy during its century of existence, it will be seen that most of those mentioned who gained renown on many a doubtful day approximated more closely to the foot than to the head of their classes. To that *beau sabreur*, General Custer, is credited the assertion that it acquired more ability to graduate at the foot of the class, like himself, without being kicked out, than at the head. Of course, it has occasionally happened that the honor men like Halleck and McClellan, of the armies of the North, and the Confederate leaders, Joseph E. Johnston and Robert E. Lee, attained to high rank and renown, but more generally good fortune in the field has favored the less brilliant cadets of the Military Academy.

In July, 1839, Halleck was commissioned second lieutenant in the Corps of Engineers. His recognized abilty and skill as an instructor while a cadet led to his being appointed Assistant Professor of Engineering at the academy. A year later he became assistant to the Board of Engineers at Washington, where he prepared an elaborate work on "Bitumen: Its Varieties, Properties and Uses," which embodied all that was then known of the application of asphalt to military structures. To his friend, Miller, he writes from the Capital in the winter of 1840: "Our party is routed horse and foot; there is scarcely enough left of us for a corporal's guard! My own feelings have not been as warmly enlisted in this political campaign as probably they would have been had not my position in the army precluded my taking any part in this partizan warfare. Nevertheless, I deeply regret the change of administration, both on account of my political opinions and the loss of many friends here who must soon leave. * * * With the society here I am most pleased. We have had several delightful supper parties recently, to which twenty-five or thirty are invited. Last week I attended one at Mrs. James K. Paulding's, wife of the Secretary of the Navy, which was very pleasant. We assemble about nine o'clock, chat, dance and partake of refreshments, until one or two o'clock. Late hours are now kept in Washington."

Halleck was ordered to New York in July, 1844, and in October, he writes to Miller from Fort Wood, New York Harbor. (See *fac simile*, Appendix A.)

Halleck was employed at Fort Wood, and other fortifications of

New York Harbor for five years, except during the summer of 1845, while on a tour of examination of public works in Europe.

From Paris he writes to his mother, January 28, 1844. "I am far away from home and friends, but under the eye of the same good Providence that guides and directs us all. May he grant us the happiness soon to meet again. I am very anxious to see you, and am impatient to finish my business here and return to the United States. Had I remained at my work in New York I should not perhaps have been able to see you any sooner than I shall now, but my being so far from you makes the time seem longer than it would under other circumstances. I have now been in France about a month and expect to remain a few weeks longer, and then visit Italy. I shall return here in about a month and sail for home in season to arrive in New York during April. Thus far my time has been most profitably spent in military fortifications and places of historical interest. Paris, where I am at present, is the capital of France, and among the world's largest cities. In beauty, it stands first of all. It contains about thirty thousand houses, some of which are extremely elegant. I was in the palace of the Tuileries a fortnight ago, and was presented to the King and Queen. They are both fine looking and advanced in years. The King conversed with me in English, which he speaks very well, but the Queen talked French, so that I was obliged to use the same language, which I had fortunately learned at West Point. One of the most interesting sights to be seen in Paris is the flower market. The climate is so mild that they can be cultivated in winter without much difficulty, and enormous quantities are brought to market by the poor, to sell to the rich people of Paris. I have seen more than a thousand pots of most beautiful flowers offered for sale at the same time."

During Halleck's absence he was promoted to a first lieutenantcy, and soon after his return to the United States, the Lowell Institute of Boston, attracted by his able reports on "Coast Defense" printed by the Government, invited him to deliver a course of twelve lectures on the Science of War.

These Lieutenant Halleck published in 1846, in a volume including an introductory chapter on the "Justifiableness of War," entitled "Elements of Military Art and Science." A second edition with much new matter relating to the Mexican and Crimean Wars appeared early in 1861. This admirable work met with a wide circulation among the volunteer officers of the armies of the North who took part in the Civil War.

At the beginning of the Mexican War Halleck was ordered to California, and sailed with Captain Tompkins's artillery command, in the transport *Lexington*, for the Pacific Coast, arriving at Monterey after a voyage of seven months. During this time he translated

Baron Tomini's "Vie Politique et Militaire de Napoleon," which, in 1864, was published in four octavo volumes accompanied with an atlas. No other English translation of this valuable work has appeared, nor is any other likely to be published. After partially fortifying Monterey, the lieutenant was employed in various civil and military affairs, acting as Secretary of State under the military government of Generals Mason and Riley, and accompanying several expeditions as military engineer. For these and many other meritorious services Halleck was brevetted captain, in May, 1847.

After the accession of California a substantial government became necessary, and a convention of delegates was called by the military governor to meet at Monterey to frame a State constitution. This convention, after a session of six weeks, agreed upon a constitution, which was submitted to and adopted by the people of the new commonwealth, and by act of Congress, September 9, 1850, California was admitted to the Union and another star was added to our flag. As the master spirit of Governor Riley's military government it was the young officer of engineers who was chiefly instrumental in initiating the movement for State government, and who, as a member of the committee chosen to draft the constitution, was substantially the author of it. Halleck continued as aide-de-camp on General Riley's staff, was Engineer and Inspector of Light Houses, and later a member of the Board of Engineers for Fortifications on the Pacific Coast. In July, 1853, be became captain of engineers, and in August of the year following Halleck resigned from the army.

Before resigning his commission Captain Halleck had declined the position of Professor of Engineering in the Lawrence Scientific School of Harvard University, which was proffered to him, and had mastered the profession of law, and been admitted a member of a prominent San Francisco firm. He now devoted himself to the practice of law, and also to the duties of director-general of the New Almaden quicksilver mine, a position to which he had been appointed in 1850. In 1855 he was elected president of the Pacific and Atlantic Railroad between San Francisco and San José and five years later became major-general of the State militia. Notwithstanding these many duties, Halleck found time to prepare "A Collection of Mining Laws of Spain and Mexico" (1859) and a work on "International Law, or Rules Regulating the Intercourse of States in Peace and War" (1861). This valuable volume was passed through numerous editions. Among Americans who have written on the "Law of Nations," such as Kent, Story, Wheaton, Wharton, Woolsey, Lawrence, Lieber and Dana, Henry W. Halleck occupies an honorable place. These scholastic representatives of our country are second to none in their successful efforts to enlarge and improve the principles of international law.

The following recollections of Halleck from the pen of Henry B. Whipple may very properly find a place in this brief biography. The bishop writes:

My cousin, General Halleck, I have known intimately from boyhood. He was a man of great intellectual ability, and few men have had a more perfect knowledge of the science of war. At his graduation from West Point he was made Assistant Professor of Engineering, and was detailed to build fortifications on Bedloe's Island, New York. While he was second lieutenant, General Scott asked his opinion in reference to seacoast defenses, and was so impressed by the young officer's views that he requested Thomas H. Benton, of the United States Senate, to offer a resolution asking Lieutenant Halleck to give the Military Committee his opinion on such defenses. He was sent to California to take charge of engineering on that coast. * * * * * Senator Forsythe, of Georgia, an eminent jurist, had advised Halleck to devote his leisure time to reading law, saying that the day would come when it would be useful. A law firm in San Francisco, Peachy and Billings, offered him copartnership with the understanding that, as his duties as a military officer had made him familiar with Spanish land grants, he should be the consulting member of the firm. He accepted the offer, purchasing a civilian suit of clothes at a cost of five hundred dollars. A few days later a client called to consult about a land grant. Halleck wrote out his opinion and asked his partners what he should charge for it, and they said five hundred dollars. This was the beginning of his success. Colonel Morris of the army wrote to General Riley congratulating him upon his wise organization of a stable government on the Pacific Coast. He replied to Morris; "You give me too much credit—that youngster, Halleck, has furnished the brains for my work."*

The study and practice of law was never irksome to Halleck, but a pursuit that he enjoyed as a strong man who delights to run a race *solatium et decus*—the more difficult the race, the greater the delight derived form its mastery. The preparation of his work on International Law, which to many if not most lawyers engaged in active practice would have been drudgery, was to General Halleck a labor of love. To him legal work was what poetry was to Coleridge —its own exceeding great reward. One of his California contemporaries assured me that few, if any, members of the San Francisco bar in the pursuit of their profession ever combined sounder mental powers with greater application and industry. From the law and judicious investment, Halleck acquired a handsome fortune before re-entering the army in 1861, when, although at the head of the most important law firm in California, and living in affluence, he promptly offered his sword and service to the National Government.†

**Lights and Shadows of a Long Epircopate*, being Reminiscences and Recollections of Henry B. Whipple, Bishop of Minnesota, 1899. p. 102.

†See letter to Reverdy Johnson App. B.

By the advice of Gen. Winfield Scott, Halleck was appointed by President Lincoln, major-general in the Regular Army, his commission being dated August 19, 1861. Scott fully appreciated his high qualifications as a commander, and an allusion in one of the old hero's letters, setting forth McClellan's disregard for his authority, created the impression that it was his wish that Halleck should succeed him as general-in-chief. Gen. Schuyler Hamilton, then on Scott's staff, writes under date of August 21, 1902. "When McClellan was spending about five millions per week, Mr. Chase, Secretary of the Treasury, said he could not furnish such enormous sums, with nothing to show for them in the way of military achievement. General Scott begged Mr. Chase to be patient. General Halleck was daily expected from California, and as Scott said, he understood the value of money and finance, and would relieve McClellan." Three months later he was appointed to the command of the Department of Missouri, embracing six Western States and a portion of Kentucky. "Around him," writes Cullum, a member of his staff, "was a chaos of insubordination, inefficiency and peculation, requiring the prompt, energetic and ceaseless exercise of his iron will, military knowledge and administrative powers. The scattered forces of his command were a medley of almost every nationality, with the organization of each and the excellence of none." The successor of General Frémont, in entering upon the arduous duties of his important position, received the following communication from the commanding general of the United States armies:

HEADQUARTERS OF THE ARMY,

Washington, D. C., November 11, 1861.

Maj.-Gen. H. W. HALLECK, U. S. A.,
Commanding Department of Missouri:

GENERAL: In assigning you to the command of the Department of the Missouri, it is probably unnecessary for me to state that I have intrusted to you a duty which requires the utmost tact and decision. You have not merely the ordinary duties of a military commander to perform, but the far more difficult task of reducing chaos to order, of changing probably the majority of the personnel of the staff of the department, and of reducing to a point of economy, consistent with the interests and necessities of the State, a system of reckless expenditure and fraud, perhaps unheard of before in the history of the world.

You will find in your department many general and staff-officers holding illegal commissions and appointments not recognized or approved by the President or Secretary of War. You will please at once inform these gentlemen of the nullity of their appointment, and see that no pay or allowances are issued to them until such time as commissions may be authorized by the President or Secretary of War.

If any of them give the slightest trouble you will at once arrest them and send them, under guard, out of the limits of your department, informing them that if they return they will be placed in close

confinement. You will please examine into the legality of the organization of the troops serving in the department. When you find any illegal, unusual or improper organizations you will give to the officers and men an opportunity to enter the legal military establishment under general laws and orders from the War Department, reporting in full to these headquarters any officer or organization that may decline.

You will please cause competent and reliable staff-officers to examine all existing contracts immediately, and suspend all payments upon them until you receive the report in each case. Where there is the slightest doubt as to the propriety of the contract, you will be good enough to refer the matter with full explanation to these headquarters, stating in each case what would be a fair compensation for the services or materials rendered under the contract. Discontinue at once the reception of material or services under any doubtful contract. Arrest and bring to prompt trial all officers who have in any way violated their duty to the Government. In regard to the political conduct of affairs, you will please labor to impress upon the inhabitants of Missouri and the adjacent States that we are fighting solely for the integrity of the Union, to uphold the power of our National Government, and to restore to the nation the blessings of peace and good order.

With respect to military operations, it is probable, from the best information in my possession, that the interests of the Government will be best served by fortifying and holding in considerable strength Rolla, Sedalia and other interior points, keeping strong patrols constantly moving from the terminal stations, and concentrating the mass of the troops on or near the Mississippi, prepared for such ulterior operations as the public interests may demand.

I would be glad to have you make as soon as possible a personal inspection of all the important points in your department, and report the result to me. I cannot too strongly impress upon you the absolute necessity of keeping me constantly advised of the strength, condition and location of your troops, together with all facts that will enable me to maintain that general direction of the armies of the United States which it is my purpose to exercise. I trust to you to maintain thorough organization, discipline and economy throughout your department. Please inform me as soon as possible of everything relating to the gunboats now in process of construction, as well as those completed.

The militia force authorized to be raised by the State of Missouri for its defense will be under your orders.

I am, general, etc.,

GEO. B. MCCLELLAN,
Major-General, Commanding U. S. Army.

Missouri and Kentucky were at that period practically but a border screen to cover the operations of the seceding South. Even Halleck's headquarters in St. Louis "fortified at exorbitant cost," continues Cullum, "and in violation of all true engineering principles, neither protected the city from insurrection within nor from besiegers without. No sooner had General Halleck assumed command than fraudulent contracts were annulled; useless stipendiaries were dismissed; a colossal staff hierarchy with more title than brains or military capacity were disbanded; composite organizations

were pruned to simple uniformity; the construction of fantastic fortifications were suspended, and in a few weeks order reigned in Missouri." Halleck's power was immediately exercised against those who under the mask of citizens aided and abetted secession.

Bands of refugees stripped of everything by the enemy arrived daily in St. Louis seeking food and shelter. This portion of the inhabitants believed to be in sympathy with the South and in secret communication with its leaders, were compelled to feed and care for the refugees—an extreme measure which the shameful persecution to which the loyal victims had been subjected, alone could justify. This action was taken after a declaration of martial law by General Halleck. From Price he received a letter in January, 1862, asking: "Do you intend to regard men whom I have specially dispatched to destroy roads, burn bridges, tear up culverts, etc., as amenable to an enemy's court-martial, or will you have them tried as usual by the proper authorities, according to the statutes of the State?" Halleck, who had placed the State under martial law chiefly with a view of dealing with this very class of offenders clearly stated his authority and his determination to severely punish all such miscreants.

He wrote to Price as follows:

No orders of yours can save from punishment, spies, marauders, robbers, incendiaries, guerrilla bands, etc., who violate the laws of war. We cannot give immunity to crime. But let us fully understand each other on this point. If you send armed forces wearing the garb of soldiers and duly enrolled as legitimate belligerents to destroy railroads, bridges, etc., as a millitary act, we shall kill them, if possible in open warfare, or if we capture them, we shall treat them as prisoners of war. But it is well understood that you have sent numbers of your adherents, in the garb of peaceful citizens and under false pretences, through our lines into northern Missouri, to rob and destroy the property of Union men and to burn and destroy railroad bridges, they endangering the lives of thousands, and this, too, without any military necessity or possible military advantage. Moreover, peaceful citizens of Missouri, working quietly on their farms, have been instigated by your emissaries to take up arms as insurgents, and to rob and plunder and to commit arson and murder. They do not even act under the garb of soldiers, but under false pretenses and in the guise of peaceful citizens. You will not certainly pretend that men guilty of such crimes, although specially "appointed and instructed by you," are entitled to the rights and immunitv of ordinarv prisoners of war.

Writing in December, 1861, to John C. Hamilton, his friend, Horace Binney, of Philadelphia, remarks:

Halleck, I believe, is your son-in-law. I like his course both first and last. That is to say, his washing the slave matter from his hands at first was good, and his readiness to execute orders was good afterward. I detest the whole work of confiscation, and would do nothing with slavery, except as a war measure under the commander-in-chief.

Slavery is dead for all the harm it can do us. Let us deal with it with some regard to the Union proprieties at least, and to the slaves themselves. The end, if it comes, and when it comes, will arrange matters on the proper footing.*

The following is an extract from an undated letter written by General Halleck to his wife, presumably from St. Louis, about the close of 1861:

So long as such resolutions stick to the Union I shall be very glad to have them, but the moment they descend to party politics I will have nothing to do with them.

I have just received a private letter from General McClellan about the attempts of the Abolitionists to create jealousies between us. It is very frank and at the same time very complimentary. I do not think our enemies will succeed in creating any discord between us.

In writing to President Lincoln, January 6, 1862, he says:

I am satisfied that the authorities at Washington do not appreciate the difficulties with which we have to contend here. The operations of Lowe, Jennison, and others have so enraged the people of Missouri, that it is estimated that there is a majority of 80,000 against the Government. We are virtually in an enemy's country. Price and others have a considerable army in the Southeast, against which I am operating with all my available force. This city and most of the middle and northern counties are insurrectionary—burning bridges, destroying telegraph lines, etc.—and can be kept down only by the presence of troops. A large portion of the foreign troops organized by General Frémont are unreliable; indeed many of them are already mutinous. They have been tampered with by politicians, and made to believe if they get up a mutiny and demand Frémont's return the Government will be forced to restore him to duty here. It is believed that some high officers are in the plot. I have already been obliged to disarm several of these organizations and I am daily expecting more serious outbreaks. Another grave difficulty is the want of proper general officers to command the troops and enforce order and discipline, and especially to protect public property from robbery and plunder. Some of the brigadier-generals assigned to this department are entirely ignorant of their duties and unfit for any command. I assure you, Mr. President, it is very difficult to accomplish much with such means. I am in the condition of a carpenter who is required to build a bridge with a dull ax, a broken saw and rotten timber. It is true that I have some very good green timber, which will answer the purpose as soon as I can get it into shape and season it a little.

General Halleck's letter from which the above lines are taken bears the President's pathetic endorsement: "It is exceedingly discouraging. As everywhere else nothing can be done."

General Frémont's management of the slavery question had been too radical and had been disapproved by the Government: Halleck's now became too conservative, and his famous Order No. 3 brought upon

*Life of Horace Binney, p. 346. Philadelphia, 1903.

him the antislavery element of the North. He was denounced in Congress and by the newspapers, and the violence of public condemnation threatened to seriously impair his military usefulness. He was placed on the defensive, and issued the following statement: "The object of this order is to prevent any person in the army from acting in the capacity of negro catcher or negro stealer. The relation between the slave and his master, or pretended master, is not a matter to be determined by the military officers, except in the single case decided by the civil authorities. One object in keeping fugitive slaves out of our camp is to keep clear of all such questions. Order No. 3 does not apply to the authorized private servants of officers nor the negroes employed by proper authority in the camps. It applies only to fugitive slaves. The prohibition to admit them within our lines does not prevent the exercise of all proper offices of humanity, in giving them food and clothing outside, where such offices are necessary to prevent suffering."

I could not, without far exceeding the space at my disposal for this brief biography, trace all the complex military movements occurring in Halleck's department, nor is it necessary for they can be seen in the general's dispatches and other documents contained in this volume. It is sufficient to state that in three months of his sway in the West Gen. Sterling Price was driven out of Missouri and that the first great success of the North was won by General Grant, in the capture of Forts Henry and Donelson, aided by Commodore Foote's gunboats. On February 16th Grant telegraphed to Halleck: "We have taken Fort Donelson and from 12,000 to 15,000 prisoners, including Generals Buckner and Bushrod R. Johnson; also about 20,000 stands of arms, forty-eight pieces of artillery, seventeen heavy guns, from 2000 to 4000 horses, and large quantities of commissary stores." After this important success Halleck reminded the Government of his desire for more extended control, telegraphing the day after the great victory: "Make Buell, Grant and Pope major-generals of volunteers, and give me command in the West. I ask this in return for Forts Henry and Donelson." The decisive battle of Pea Ridge was won by General Curtis early in March, and that was followed by General Pope's capture of New Madrid and Island No. 10, which, by the ingenious device of Gen. Schuyler Hamilton's cut-off canal, was taken in reverse, and this strong barrier of the Mississippi River removed by the combined forces of the army and navy. These victories were succeeded by the severe conflict at Shiloh in which the Northern army sustained heavy losses on the first day, but achieved a great victory on the second, when Buell's and Grant's armies were united.

To give greater unity to military operation in the West, Halleck's

command was extended by the President in accordance with the following order:

Telegraph the following order to Major-General Halleck, at Saint Louis, Mo.:

PRESIDENT'S WAR ORDER, No. 3 } EXECUTIVE MANSION, *Washington, March* 11, 1862.

Major-General McClellan having personally taken the field at the head of the Army of the Potomac, until otherwise ordered he is relieved from the command of the other military departments, he retaining command of the Department of the Potomac.

Ordered further, That the two departments now under the respective commands of Generals Halleck and Hunter, together with so much of that under General Buell as lies west of a north and south line indefinitely drawn through Knoxville, Tenn., be consolidated and designated the Department of the Mississippi, and that until otherwise ordered Major-General Halleck have command of said department.

Ordered also, That the country west of the Department of the Potomac and east of the Department of the Mississippi be a military department, to be called the Mountain Department, and that the same be commanded by Major-General Fremont. That all the commanders of departments, after the receipt of this order by them respectively, report severally and directly to the Secretary of War, and that prompt, full and frequent reports will be expected of all and each of them.

ABRAHAM LINCOLN.

By order of the Secretary of War:

L. THOMAS.
Adjutant-General.

Halleck having decided to take the field arrived at Pittsburg Landing on April 11th, on which day the writer first met him, and where, within a week, he was named by the soldiers, "Old Brains." As I remember, after two score years, he impressed me as being "a very castle of a man," to borrow Irving's description of Fenimore Cooper, to whom he bore a strong physical resemblance. Halleck was then in the prime of life, possessing robust health and great mental vigor, about five feet nine inches tall, and weighing perhaps one hundred and seventy or eighty pounds. He was carefully dressed in a new uniform, wearing his sword, and carrying himself erect, with a distant and somewhat austere manner, presenting, as he walked down the steamer's gangplank, altogether a striking contrast to General Grant, who was then under a cloud. Halleck immediately reorganized his large command, increased by the arrival, on the 22d, of General Pope with 20,000 well-organized troops. His special field orders of April 28th named the Army of the Tennessee, the First Army Corps, commanded by Grant, and constituting the right wing; the Army of the Ohio, the Second Army Corps, commanded by Buell, and constituting the center; and the Army of the Mississippi, the Third Army Corps, commanded by Pope, and forming the left wing. Pre-eminently

cautious by nature, he was the more cautious now because assured of ultimate success in capturing Corinth, against which he was moving. Always averse to the unnecessary shedding of blood, instead of advancing boldly against Beauregard, as Grant or Sherman would have done, without delay, Halleck, with double his numbers, first fortified his position on the left bank of the Tennessee River, and then moved upon the enemy "with pick and shovel," as Sherman said, instead of marching forward promptly with his 100,000 bayonets. Corinth was captured on May 29th, but Beauregard and his army escaped, and were not pursued with much vigor or success. For this achievement which was the triumph of a strategist, not the success of an energetic general, the Secretary of War telegraphed: "Your glorious dispatch has just been received, and I have sent it in to every State. The whole land will soon ring with applause at the achievement of your gallant army and its able and victorious commander."

The disastrous failures of McClellan and Pope in Virginia, during the early summer of 1862, both alarmed and disheartened the President. They had both been beaten and it appeared impossible to overcome the prejudices and enmities existing between the defeated commanders. McClellan was clearly incompetent, and Lincoln in his perplexity decided that it was imperative that he should have a military adviser, and so he turned to General Halleck who had been recommended by the old hero of two wars, well named Winfield Scott, then overcome by the infirmities of age. Halleck had achieved success by directing the movements leading to the victories of Fort Donelson, Island No. 10, and capture of Corinth, was known as a man of strong intellectual powers, a master of the theory of military art, as well as the author of several valuable volumns on tactics and international law. Declining the President's invitation to Washington for a conference in the unfortunate military condition existing in the East, he promptly obeyed his orders of July 11th, arriving in the Capital on the 23d. Halleck went unwillingly. Sherman had warned him against Washington as a place filled with unscrupulous politicians, and greedy, self-seeking scoundrels, and a year later wrote to Grant: "Do not stay in Washington. Halleck is better qualified than you to stand the buffets of intrigue and policy. Come out to the West; take to yourself the whole Mississippi Valley; let us make it dead sure, and I tell you the Atlantic Slope and Pacific shores will follow its destiny as sure as the limbs of a tree live or die with the main trunk! * * * For God's sake and for your country's sake come out of Washington! I foretold to General Halleck before he left Corinth, the inevitable result to him, and now I expect you to come out West."

[TO BE CONTINUED.]

APPENDIX.

[A] General Halleck to Theodore Miller.

(Fac-Simile)

Fort Wood, N. York Harbor,
October 8th 1841

My dear Miller.

I have this day received, via Washington, your very kind letter of the 2d inst. I owe you many apologies for my continued silence, but will not now trouble you with the details.

I left Washington last July for the purpose of making a hurried survey and examination of this Fort, and returned again in a few weeks for the purpose of making plans preparatory to its repair. A recent appropriation of $50,000 for this purpose has, within a few days, brought me back to this place for the purpose of superintending these public works, and in all probability I shall be kept here some year or two. As you have doubtless often noticed this Fort from N. York city, and perhaps visited it I will not trouble you with a description. It is in a very important position for the defence of the city, and is now so completely dilapidated as to be entirely defenceless. It was built by contract, in great haste, at the commencement of the last war, and its masonry is now all tumbling to the ground. A fair proof of the ruinous

policy our government pursues of postponing the construction of their principal defences till war is actually forced upon us and then hastily building miserable trumble-down concerns. Millions of money have in this way been lost; and should we now be involved in war, millions more must be expended before thousands would have been sufficient, if they had been appropriated a few years ago and properly applied. I may some day give you my views on this subject more at length.

Your surmises respecting my matrimonial

I agree with you that the President is a miserable milksop every fellow and now has the confidence of any party. His two years are most contemptible ones, and excites the contempt of most that know them. The Democrats should take up Forsyth or Buchannon. The old Federalism of the latter may weigh against him, but I cannot conceive what objection can be made to the former. He certainly was the ablest member of both Jackson's & Van Buren's cabinets. Compare his letters to Fox, with those of Webster — How infinitely superior!

I am my dear Miller,
most truly, and affectionately yours.
H. Wager Halleck

[B] GENERAL HALLECK TO REVERDY JOHNSON

San Francisco, April 30, 1861.

MY DEAR BISHOP:* Your letter of March 30th is duly received, and I am most happy to learn that your health is so much improved.

We have much later news by the pony express—to the 18th inst.—giving full accounts of the attack and surrender of Fort Sumter, the President's proclamation, and the general arming, both North and South. Civil war seems now to be inevitable. This news has caused a deep feeling of regret here, and will have a very depressing effect upon property and business.

Whatever Virginia may have done or may do, I really hope that Maryland may not secede. If she goes there must result an immediate contest for the Capital. However, if no slave States remain in the Union, the North will become ultra antislavery, and I fear, in the course of the war will declare for emancipation and thus add the horrors of a servile to that of a civil war. But if Maryland should remain in the Union, slavery will still be recognized and protected under the Constitution, and the door be kept open for a compromise or reconstruction, if either should become possible. I, however, see very little hope of either till much of the bad blood of our present political leaders is drawn off by the sword and the cannon.

It is currently reported that a number of emissaries of Jeff. Davis have recently arrived here with overtures to prominent Southern men. Several officers of the army here have resigned, and it is supposed will take commissions in the Confederate Army. I do not anticipate much trouble here for the present, but still it may come much sooner than we think. Our Governor, Downey, stands firmly up to the mark as a Union man; but who may next change no one can tell. The commander of the Pacific Division, General Johnston, a relative by marriage I believe of Jeff. Davis, resigned some three weeks ago, but is to remain, it is said, for the present upon this coast, and it is asked, for what purpose? Time alone can answer.

Added to all these anticipated troubles we already have a squatter rebellion in three counties and a suspension of the authority of the courts. In all probability a militia force will be ordered out, and it is possible that I may have to put on the old uniform. So, you will see, we have our own troubles and anxieties here, although so far removed from the general seat of war. * * * * *

Yours most truly,

H. W. HALLECK.

[C] GENERAL HALLECK TO BISHOP WHIPPLE.

St. Louis, Nov. 29, 1861.

MY DEAR COUSIN: Yours of November 12th is just received. I have little or no time for private correspondence, nevertheless I cannot let the letter of my old friend and cousin pass unnoticed. * * * * * Affairs in this department are in a most deplorable condition—whether made so purposely or not I will not say. If I can ever get any order out of this chaos I shall be satisfied. Of course I shall be abused by the extreme abolitionists and the pro-slavery secessionists. But it will not drive me from the course of

*Mr. Johnson's son writes: "My father spent several months in California on professional business before the opening of the Civil War, but why General Halleck addresses him as 'Bishop,' I cannot conceive."

policy which I have determined on and shall pursue until I am removed, which very likely, will soon take place. I am resolved to be the instrument of no political faction, having no political aspirations myself. I shall do my duty faithfully, as I understand it, let the consequences be what they may. * * * * * Good-bye, dear cousin, write me as often as you can.

Yours very truly,

H. W. Halleck.

[D] General Halleck to Mrs. Halleck.

St. Louis, Dec. 14, 1861.

My Dear Wife: It is Saturday night and pretty late at that. My week's work is ended and a hard one it has been. To-morrow I shall rest, at least a part of the time. Schuyler (Hamilton), Cullum and the other members of the staff, are pretty well worked out, but I feel in better working order than when I first came here. I have often felt that my powers of labor had never been fully tested, but now I have as much as I can possibly do. The task before me is immense, but I feel that I can accomplish it. I believe I can say it without vanity that I have talent for command and administration. At least I have seen no one here who can accomplish half so much in twenty-four hours as I do. I never go to bed leaving anything of the day's business undone. Nearly all back business is cleaned up, and everything is getting straightened out and put in its place. This is very encouraging and I begin to see my way through the chaos and corruption which Fremont left behind him. Of course all his satellites abuse me in the newspapers, but this does not annoy me in the least.

I enclose a letter just received from Mrs. Sherman. How do you suppose I answered it? I could not say her husband was *not* crazy, for certainly he has acted insane. Not wishing to hurt her feelings by telling her what I thought, and being unwilling to say what I did not believe, I treated the whole matter as a joke, and wrote her that I would willingly take all the newspapers said against General Sherman, if he would take all they said against me, for I was certain to gain by the exchange!

In January, 1862, Lincoln wrote to Halleck: "For my own views, I have not offered, and do not now offer, them as orders, and while I am glad to have them respectfully considered, I would blame you to follow them contrary to your own judgment, unless I should put them in the form of orders. With this preliminary, I state my general idea of this war to be that we have the greater numbers and the enemy has the greater facility of concentrating forces upon points of collision; that we must fail unless we can find some way of making our advantage an overmatch for his; and that this can only be done by menacing him with superior forces at different points, at the same time, so that we can safely attack one or both if he makes no change; and if he weakens one to strengthen the other, forbear to attack the strengthened one, but seize and hold the weakened one, gaining so much."

[E] GENERAL HALLECK TO MRS. HALLECK.

HEADQUARTERS, DEPARTMENT OF THE MISSOURI,

St. Louis, March 5, 1862.

MY DEAR WIFE: The fall of Columbus, the great "Gibraltar of the West," and the taking of New Madrid have followed the consequences of the victory of Fort Donelson, just as Bowling Green and Nashville were abandoned to General Buell in consequence of the same strategic movements. The newspapers give the credit of these things to Stanton, McClellan and Buell, but fortunately I have the recorded evidence that they even failed to approve them after I had planned them. Of course I have been very, very busy, not only in carrying out these plans, but in forming new ones. My army is getting into something like shape, and the soldiers are in excellent spirits.
* * * * *

I understand that Mackall and Gilmer were both with General Johnston in his flight from Bowling Green and Nashville. They are now, I believe, at Chattanooga, near the line of Georgia.

[F] GENERAL HALLECK TO THE ADJUTANT-GENERAL.

HEADQUARTERS, DEPARTMENT OF THE MISSISSIPPI,

St. Louis, March 15, 1862.

BRIGADIER-GENERAL LORENZO THOMAS,

Adjutant-General of the Army, Washington.

GENERAL: In accordance with your instructions of the 15th inst. I report that General Grant and several officers of high rank in the command, immediately after the battle of Fort Donelson, went to Nashville without my authority or knowledge.

I am satisfied, however, from investigation, that General Grant did this from good intentions, and from a desire to subserve the public interests. Not having advice of General Buell's movements, and learning that General Buell had ordered Smith's division of his (Grant's) command to Nashville, he deemed his duty to go there in person. During the absence of General Grant, and a part of his general officers, numerous irregularities are said to have occurred at Fort Donelson. These were in violation of the orders issued by General Grant before his departure, and probably, under the circumstances, were unavoidable.

General Grant has made the proper explanations and has been directed to resume his command in the field. As he acted from a praiseworthy, although mistaken, zeal for the public service in going to Nashville and leaving his command, I respectfully recommend that no further notice be taken of it.

There never has been any want of military subordination on the part of General Grant, and his failure to make return of his forces has been explained as resulting partly from the failure of colonels of regiments to report to him on their arrival, and partly from an interruption of telegraphic communications. All these irregularities have now been remedied.

Very respectfully, your obedient servant,

H. W. HALLECK,
Major-General.

[G] GENERAL HALLECK TO MRS. HALLECK.

Pittsburg Landing, Tenn., April 14, 1862.

MY DEAR WIFE: I left St. Louis on Wednesday last and arrived on Friday evening. The officers seemed very glad to see me, as according to all accounts and my own observations, this army is undisciplined and very much disorganized, the officers being utterly incapable of maintaining order. I have been very hard at work for the last three days endeavoring to straighten things out, and hope to succeed in time. The battles of the 6th and 7th were terrible slaughters, but our troops have suffered much less than the enemy. Gen. Albert S. Johnston, Mrs. Hepburn's brother-in-law, was killed on the field and is buried near-by. Gilmer was on his staff, but I hear nothing of him.

I have been living on a steamer since I arrived, but shall go into camp with the soldiers to-morrow. The Landing has only a few lone houses which are occupied by army stores, and I shall live in a tent. Living out in this way is not very comfortable in rainy weather, but it always agrees with my health, and I rather like it, notwithstanding the inconveniences. Moreover, it will have a good effect upon the soldiers to camp out with them.

[H] *Corinth, July* 5, 1862.

* * * * *

I have been so much troubled and annoyed within the last few days that I have had no heart to write to you. The first news I received of General McClellan's reverses before Richmond was a telegraphic order from the Secretary of War to send him twenty-five thousand men from here. To obey this peremptory order was to ruin all I had gained here in the Southwest, and I felt utterly broken-hearted. My first impulse was to resign and go home to California. But this my duty to my country forbade. I have finally received the order made discretionary with me and I can now breathe more freely, but I am afraid that McClellan and Pope will work upon the mind of the President till he gives them a part of my army. If so, it will be almost fatal.

I am beginning to lose much of my faith in McClellan's judgment. That he is selfish, I have had abundant proofs in the course he has pursued with this army of the West, or at least my part of it. I hope, however, that everything will yet be right, and that these ridiculous jealousies will subside.

[I] *Corinth, July* 13, 1862.

* * * * *

The events of the last two weeks have been truly momentous. The failure of McClellan before Richmond has taken us all aback and greatly complicated the events of the war. Two messengers were sent to me, one from the President and one from McClellan, inviting me to go to Washington and the President and Secretary of War both telegraphed me to the same effect, but I declined the invitation, knowing that the object was to involve me in the quarrel between Stanton and McClellan. One of the messengers said that I was the only man in the United States who could reconcile the present difficulties. I replied that if that was the case I was probably the only person in the United States who would have nothing to do with these Cabinet quarrels, and that I would not go to Washington if I could help it! When lo and behold, the President issues a mandate

making me general-in-chief, and *ordering* me to Washington to assume command of McClellan and all the other generals of the army! In fact, putting me in General Scott's place. This is certainly a very high compliment, but I doubt very much whether I shall accept the promotion. I fear it may bring me in conflict with McClellan's friends. Everybody who knows me, knows that I have uniformly supported him, and I do not wish to be placed in a false position. Nevertheless, I must obey my orders and shall start for Washington some time next week. * * * * *

[K] *Washington, July* 28, 1862.

* * * * * *

I returned here yesterday. General McClellan received me kindly, but our interview was from its nature necessarily somewhat embarrassing, especially as I was obliged to disagree with him as to the feasibility of his plans. It certainly was unpleasant to tell one who had been my superior in rank that his plans were wrong, but my duty to myself and the country compelled me to do so. If I had approved them I should have become responsible for them, and I could not in conscience do so. General McClellan is in many respects a most excellent and valuable man, but he does not understand strategy and should never plan a campaign. We can get along well together, if he is so disposed; but I fear that his friends have excited his jealousy and that he will be disposed to pitch into me. Very well. My hands are clean. When in command of the army no one did more than I did to sustain him, and in justice to me and to the country he ought now to sustain me. I hope he will, but I doubt it. He is surrounded by very weak advisers.

[L] HEADQUARTERS OF THE ARMY,
Washington, Aug. 9, 1862.

* * * * *

I feel broken down every night with the heat, labor and responsibility, but am in good health. The President and Cabinet have thus far approved everything I have proposed. This is kind and complimentary, but it only increases my responsibility, for if any disaster happens they can say We did for you all you asked. The great difficulty now is to get the troops together in time. I have felt so uneasy for some days about General Pope's army that I could hardly sleep. I cannot get General McClellan to do what I wish. The President and Cabinet have lost all confidence in him and urge me to remove him from command. This is strictly *entres nour*. In other words they want me to do what they were afraid to attempt! I hope I may never be obliged to follow their advice in this matter.

[M] HEADQUARTERS OF THE ARMY,
Washington, Aug. 13, 1862.

* * * * *

The victory of General Pope at Culpeper gives me breathing time and is of immense advantage. I am doing everything in my power to get the new troops into the field, and the sky here is cleared. But at the West everything since I left seems to go wrong. It is the strangest thing in the world to me that this war has developed so little talent in our generals. There is not a single one in the West fit for a great command. Probably it is because politics interfere so much with promotion.

The President and Secretary have thus far treated me as well as I could wish. Indeed, they seem willing to give me more power than I desire to exercise on some points. All seem to give me the credit of having put new energy into the government here. I certainly have tried very hard to do so. Matters just now are progressing very satisfactorily.

[N] HEADQUARTERS OF THE ARMY,
Washington, Sept. 2, 1862.

* * * * *

I have scarcely slept for the last four nights and am almost worn out. * * * * * General McClellan is now with me and co-operating heartily. Pope has had six days of severe fighting in front of Alexandria and must probably fight again to-day. We are doing all in our power to secure Washington, and everybody now admits that if I had not brought McClellan's army here when I did, we should have been lost. As it is we have every hope.

[O] HEADQUARTERS OF THE ARMY,
Washington, Sept. 5, 1862.

* * * * *

Yours of the third is just received. I hope and believe I have saved the capital from the terrible crisis brought upon us by the stupidity of others. I got McClellan's army here just in time—and barely that—to save us. Few can conceive the terrible anxiety I have had within the last month. I foresaw all that has occurred, but I feared to tell it to more than a few in strict confidence lest I should produce a general panic. Generals Cullum, Meigs, the Secretary of War, and a few of the members of my staff, were the only persons to whom I told what I considered our real danger—the capture of Washington. I think it is now past. I have been able to call on only a few of the wounded officers. I would like to go and see them as they pass through here, but it is impossible.

I hardly know myself how I am able to keep up amidst the excitement and labor of my office. The generals all around me are quarreling among themselves, while I am doing all in my power to conciliate and satisfy. It is sad to witness the selfishness of men at this time of sore trial. I have no ambition or hopes beyond my present position, and would resign that to-morrow if I could do so conscientiously. I want to go back to private life as soon as possible and never again to put my foot in Washington.

We are organizing a new army as rapidly as possible and hope to do better next time. Pope was not defeated, but he failed to defeat the enemy. He is, of course, in ill-humor with everybody, and very likely will pitch into me. I think, however, he will again be my friend in a few days.

[P] HEADQUARTERS OF THE ARMY,
Washington, Sept. 9, 1862.

I am glad to hear that Charlie* is doing well and that his wounds are not likely to prove very serious. General Tower, whom you knew as major, is very severely wounded. When Daniel† went on with

*Charles Apthorp Hamilton, Lieutenant-Colonel, Seventh Wisconsin Infantry.

†Daniel, General Halleck's servant.

Charlie he thought of visiting you at Newport, as he was not in good health. I told him he could either do that or go home to Oswego for a week. He has not yet returned. Jackson* is still at home in Westernville, quite unwell, but hopes to very soon be able to return to Prime in the West.

I am greatly dissatisfied with the way things go here. There are so many cooks. They destroy the broth. I am tired and disgusted with this great political machine. It does not suit me at all.

[Q] HEADQUARTERS OF THE ARMY,
Washington, Oct. 7, 1862.

Everything would now be satisfactory if I could only get General McClellan to move. He has now lain still *twenty days* since the battle of Antietam, and I cannot persuade him to advance an inch. It puts me out of all patience. * * * * *

*Andrew Jackson Halleck (the general's brother) Chief Clerk to Col. Frederick E. Prime U. S. Engineers.





CHIEF JOSEPH.

AN INCIDENT OF THE NEZ PERCE CAMPAIGN.

By H. J. Davis, a Former Sergeant 2nd Cavalry.

DURING the memorable campaign against the Nez Perce Indians, in the year 1877, there were many stirring incidents that have never been given to the public, and notably among these is the Camas Meadow fight of Capt. Randolph Norwood's Company L, of the 2nd Cavalry. The writer was a member of that company at the time, and will describe it as he saw it. In the early part of the summer we had assisted the 5th Infantry, under Col. Nelson A. Miles, in rounding up and capturing the remnant band of Cheyenne Sioux, under Lame Deer, and bringing them into the cantonment at the mouth of Tongue River. Shortly after arriving there, Gen. W. T. Sherman and staff, and the General's son, Thomas, came up the Yellowstone on a tour of inspection, and we were ordered to escort them to Fort Ellis, which was our home station. Arriving there, a portion of the company was detailed to accompany our distinguished visitors on a trip of sightseeing to the Yellowstone Park. They had scarcely departed when dispatches arrived telling of a disastrous engagement of Col. John Gibbon's troops with the Nez Perces at Big Hole Pass, something like one hundred and sixty miles away; saying he was in desperate circumstances and in danger of annihilation, and ordering us to hasten with all speed to his relief. Our company was depleted, by various details, to about fifty men, and with this force we started within the hour, which was already late in the day. Virginia City, sixty miles, was made on the night of the following day; the next ninety miles were made without halt, except for coffee for the men and short rests for the horses. It was a tedious ride; all day, all night and all day again, the steady plod, plod of the horses, broken at night by the occasional, smothered exclamation or oath of

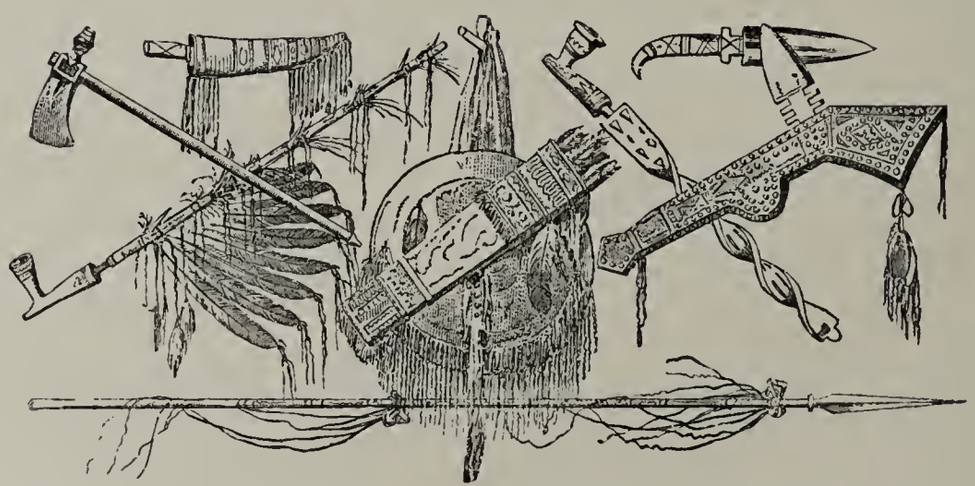
some trooper who had dropped asleep and nearly fallen from his horse. On the second night out from Virginia City we went into camp late, and moved early the following morning, and had not been on the road long before we met a wagon and travois train bringing wounded from the battle-field. They told us that they had been soundly whipped, with great loss, and that the Indians, unable to dislodge them, had, after a three days' siege, departed, taking a south-easterly course and following the main range of the Rocky Mountains. They would, without question, have killed or captured every man of Gibbon's force had not they been apprised of a large force of soldiers coming from the west. This was Gen. O. O. Howard's command, consisting of two companies of the 1st U. S. Cavalry, two or three batteries of the 4th U. S. Artillery and the 21st U. S. Infantry. The artillery was equipped as infantry. This force we joined, and then began a stern chase which proved to be the traditional long chase. Our course was the same as the Indians had taken. But with our heavier impedimenta the best we could do was to keep from fifteen to twenty miles behind them. We crossed to the south side of the main range, and for seven nights we slept booted and spurred. We were following the trail which, after crossing the mountains, led through a good grazing country, and from the numerous carcasses of cattle which lined the trail we knew the Indians were well sustained. An interesting fact, to those not acquainted with Indian ways, is that these dead steers were disemboweled and the bulk of the internal arrangements had disappeared, while the loins, rump, and, in fact, all choice parts, from a white man's point of view, had not been disturbed. The trail was easily followed, as it was from fifty to one hundred and fifty feet wide, and the vegetation was almost entirely obliterated by the tramping of their several hundred ponies and the dragging of scores of travois poles. At their halting places we found many fresh made graves, showing that their wounded list was rapidly growing smaller. We also noticed, at such resting spots, numbers of conical piles of pony droppings, evidently built by hand, which our scouts told us were constructed by the young bucks, and intended to show their contempt for us. When we struck Camas Creek, General Howard decided to give the men and horses a chance to rest, as our march had been arduous, and the Indians seemed about to strike for the headwaters of Snake River, and from there enter the then almost wholly unexplored Yellowstone Park. We camped on the east bank of Camas Creek, on open ground. Opposite, and above the camp, the creek was fringed with cottonwoods and alders, and below, the banks were clear and the stream flowed over a natural meadow to "The Sink," a few miles below, where it disappeared. The creek was literally alive with trout from twelve to twenty inches long, and offered the finest sport I have ever seen; and with only a small portion of the

men fishing, enough were taken to feed the entire command. In the immediate vicinity of that camp ground there is now a company, with a capital of $200,000, engaged in raising trout for market, and they supply Ogden, Salt Lake City, and even San Francisco; the waters are ideal for the purpose. At night, guards were posted, and a picket post was established some five hundred yards upstream, near the creek and on a rocky knoll, and two at other points. The mule herd was turned loose to graze in the space between the camp and the principal picket post, mentioned above. Some of the men slept under the wagons and others pitched shelter tents; I chose the latter method, and with Private Monaghan for a "bunky" was soon in a state of "inocuous desuetude." Either our pickets fell asleep or the Indians were very astute, for during the dark half hour that generally precedes daylight, we were awakened by a disconcerting concert of demoniacal yells and a cracking of rifles, while the whizzing of bullets could be heard well overhead. Everyone was out in a minute, and all we could see was a magnified imitation of a swarm of fireflies flitting in the alders, as the rifles spoke; while the tramping of hundreds of hoofs added to the din. We had no sooner sent them a "Roland for their Oliver" than the fireflies ceased winking, and, except the noise we were making ourselves, nothing could be heard but receding hoofbeats and faint yells, as the enemy returned from whence they came, taking with them, as a souvenir, about one hundred and fifty mules, our pack-train. Our company horses had pulled one picket-pin, and had then milled 'round and 'round and twisted themselves into a grotesque puzzle. Orders came quickly, given for the three companies of cavalry to saddle, pursue and try to recapture the pack-train. One company of the 1st Cav. was to make a detour to the right and the other to the left, and our company was to follow the trail. The morning air was extremely chilly and crisp and the horses rank, so that what was an orderly gallop, at first, soon developed into a race. After half an hour of this we approached a ridge, which was the first roll of the foot-hills. The first ones to make the summit of the ridge suddenly stopped and then quickly returned to the foot; as the rest of us came up we soon learned that the Indians had made a stand just over the ridge. We dismounted, and the Number Fours, each holding four horses, being unable to fight, left about thirty-five of us to meet the Indians. Crawling to the top we saw a line of dismounted skirmishers, standing behind their ponies, on open ground and about a thousand yards away. We deployed along the ridge, and for twenty minutes or so exchanged shots with them with but little damage on either side, as the range was long for our Springfields and longer for their Winchesters. Lieutenant Benson of the 7th Infantry, who was attached to our company for the day, standing up for an instant, just at my side, received a bullet which entered at the hip-pocket and

went out at the other, having passed entirely through both buttocks; this, while we were facing the enemy, caused us to realize that we had no ordinary Indians to deal with, for while we had been frolicking with the skirmishers in front, Chief Joseph had engineered as neat a double flank movement as could be imagined, and we were exposed to a raking fire coming from right and left. The horses had been withdrawn, more than five hundred yards, to a clump of cottonwoods; and when we turned around there was no sight nor sign of them. For a brief period there was a panic, and then we heard the notes of a bugle blowing "Recall" from the cottonwood thicket. The race to that thicket was something never to be forgotten, for a cavalryman is not trained for a five hundred yard sprint; luck was with us, however, and no man was hit in that mad race for safety. I had a horse's nose-bag slung over my shoulder containing extra cartridges, and a bullet cut the strap and let it fall to the ground. A hero would have stopped, gone back and recovered that bag, but not I. We all reached the horses and found the place an admirable one for defence; it was a sort of basin, an acre or so in extent, with a rim high enough to protect our horses, and filled with young cottonwoods in full leaf. It was oval in shape, and we deployed in all directions around the rim. For two hours it was a sniping game and our casualties were eight. The Indians crawled very close, one shooting Harry Trevor in the back at about fifteen feet, as we knew by the moccasin tracks and empty shells found behind a rock after the engagement. Poor Trevor's wound was mortal as was that of Sam Glass, who was shot through the bladder; a bullet hit Sergeant Garland's cartridge-belt and drove two cartridges from it clean through his body; his wound never healed and he blew out his brains a few years later. Will Clark had his shoulder partly torn away by an explosive ball; Sergeant Wilkins, a head wound and Farrier Jones, a "busted" knee; a citizen attaché, a bullet through the foot, and the lieutenant, wounded as told above. This was the amount of damage done to us, and what we did to the Indians we never knew, as they retreated in good order taking their dead or injured with them, after they found they could not dislodge us. Three dead ponies and some pools of blood were all the records we found of their casualties. The real hero of the occasion was Serg. Hugh McCafferty, who climbed a cottonwood tree, and in short range of every Indian and only concealed by the foliage, kept us posted on their movements by passing the word to a man stationed under the tree. For this act he was given a certificate of merit and a medal, by Congress. It should have been mentioned that we recovered twenty mules that were dropped by the Indians about midway between the camp and battle-ground. The others were never retaken, but were worn out or died before the final surrender of the few survivors to Colonel Miles. We took up the trail the next day, after our wounded

had been started for the post, under escort. I could never understand how those two companies of the 1st Cavalry could have missed the Indians and gotten entirely out of touch with us, when we started together and we were fighting within half an hour and kept it up for nearly three hours. More could be told of our chase through forest and canyon, over mountains and across gorges, where wagons had to be let down almost perpendicular walls by hand, for two hundred feet. But that is another story.







LONGEING AND TRAINING AT OBSTACLES.

By Count Raoul de Gontaut-Biron, Former Riding-master at Saumur.

Translated for the Second Division, General Staff, United States Army, by Captain CECIL STEWART, 4th U. S. Cavalry.

PREFACE.

FRIENDS and former comrades of the army, allow me to present to you this work!

Of course I do not pretend to have invented longeing and training at obstacles. But I do make use of the longe in a manner different from that generally laid down; while the books and regulations consider longeing as quite fatiguing and recommend its use with moderation, I make use of it quite often during lessons relatively long, and nevertheless my horses experience scarcely any more fatigue than if they were traveling free on a straight track. As regards training at obstacles I make the same claims; everybody agrees in saying that it is advisable not to make horses jump more than once or twice a day, lest they be injured and made stubborn; now I daily jump them over a great number of obstacles without ever causing blemishes or obstinacy.

Those who shall do me the honor of reading these few pages should be able to ascertain that they are the result of attentive observation and experience already long. In spite of their numerous imperfections I have decided to publish them, yielding to kind entreaties. I hope also to be of service, and I affirm that in following the method laid down, the horseman will quickly experience great satisfaction. Shall I dare to say that my work has a little sanction

from the past? Yet I wish for it, on account of others and myself, that of the future.

Here is the order in which I treat of the numerous questions that my subject embraces:

PART FIRST.

Longeing.

Chapter I.—Benefit of longeing.
Chapter II.—Means of management which the horse trained on the longe should obey.
Chapter III.—Method of training on the longe.

PART SECOND.

Training at Obstacles.

Chapter I.—Benefit of training the horse at obstacles.
Chapter II.—What is meant by a good jumper.
Chapter III.—Analytical study of jump of the horses at large.
Chapter IV.—How the rider should behave during the jump.
Chapter V.—Hold of reins advised.
Chapter VI.—Study of the different methods of training at obstacles.
Chapter VII.—Outline of a method combining the advantages and avoiding the inconvenience of the other methods.
Chapter VIII.—Instruction of rider and manner of taking obstacles.
Chapter IX.—Different causes that prevent the horse from jumping.
Chapter X.—Horse too eager at the obstacle; causes and remedies.
Chapter XI.—Horse too sluggish at the obstacle; causes and remedies.
Chapter XII.—Use of the riding-whip.

I. LONGEING.

CHAPTER I.

Benefit of Longeing.

Longeing is of great benefit:

First.—In exercising a young horse.

Second.—In giving exercise to a horse, that for any reason cannot be ridden or harnessed.*

Third.—In suppling.

First.—*In exercising a young horse.*—Longeing is recognized as so beneficial, that all who have written on raising and training horses, recommend its use; nevertheless, the greater number of breeders make no use of it, since they are ignorant of the practical means of making this exercise of benefit to the animal and at the same time easy to impart.

The colt, before having acquired the strength necessary for being put to harness or under the saddle, should be longed so as early to develop his powers, to supple him and finally to familiarize him with man and to habituate him to his domination. Unfortunately this work, generally little understood, becomes so difficult in its application, that it is neglected when not absolutely necessary. Also in the customary run of things, only race-horses undergo it, there being no time to lose with them, since they should make their trials from the time they are two-year-olds, and consequently acquire the greatest development possible at that age.

*Of this kind are vicious animals that must be broken by work, always of such nature as never to be harmful to their sound state.

Second.—*In giving exercise to a horse, that for any reason cannot be ridden or harnessed.*—Under a great number of circumstances, longeing, if well understood, might be practically made use of for horses in service. For example, one has a hunter or racer that on account of an injury cannot be ridden; if the way of making him take his exercise on the longe is known, one can prevent, to a great extent, his losing condition, which would have been difficult, if led by hand he had been treated only to walks.

In stables, little watched over, it is not unusual to see horses remain five or six days running, without going out, and that to avoid cleaning the saddles, harness and carriages, which it would have been necessary to use in the daily airings.

How often we have seen grooms, some incapable of riding their masters' horses, others leaving them tied, during the worst season, at the doors of grog-shops, where they were taking distempers instead of outings for their health.

When one has not at the head of his stable a man loving a horse sufficiently to be entirely trusted in, it is indispensable to exercise a serious supervision, so as to remedy as much as possible the disadvantages of a lazy, incapable and negligent groom.

As to the exercise to be given outside of the days when the master needs his horses, longeing seems to me the easiest to supervise, it being understood that it can be given at a fixed time and place.

Temper as well as condition are the better for exercise regularly taken. It is not unusual to see people astonished that their horses, formerly so well behaved, have become skittish and even vicious. The sole cause of these fits of high spirits, that quite often degenerate into real vices, come from too prolonged rest.*

Persons owning horses hard to mount or that hump themselves up, during the first part of the ride, would do well to use the longe for some minutes; they would thus avoid the annoyances occasioned often by sensitive loins or too ardent temperament, which gives rise equally to accidents and diseases which make the veterinary's visits useful.

Third.—*In suppling.*—The colt, after having been put on the longe, with judicious limitations, will possess a suppleness and a certain habit of obedience, that will simplify his training, above all, if he is destined for the saddle.

Even in stables where the greatest confidence can be placed in the man charged with regulating the daily outings, putting the horses from time to time to this exercise must not be neglected; excellent schooling that keeps up in some the suppleness acquired and that causes it to be acquired by others. Suppleness merits more appreciation than it generally receives, for the horse in use enjoying this quality will not expend his strength uselessly, and consequently will tire less.†

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*Each year, in cavalry regiments, there were designated to mount infantry officers, horses chosen always from the best behaved; yet, after some time, these horses were often sent back to the regiment as hard to manage and vicious. Too long rests were the sole causes of vices that disappeared generally when these animals were returned to the regular work of the squadrons.

†By chance I met a person in despair because his horse, when harnessed up, slipped every moment on the pavement, principally in turning, and contrary to what happened in the country, tired very quickly and sweated abundantly.

After having examined the way the horse handled himself in turning, I believed I had dis-

CHAPTER II.

MEANS OF MANAGEMENT WHICH THE HORSE TRAINED ON THE LONGE SHOULD OBEY.

A horse is accounted *trained* when *the instructor handles him perfectly, in all senses, without the help of the assistant, whom he had to make use of in the first lessons.**

The trained horse ought to obey:

First.—The human voice (principally).

Second.—The indications transmitted to him by the cavesson.

Third.—The action of the long whip.

Fourth.—The combined action of these two means. When the horse answers to all these actions† he ought to work on the ring with scarcely more fatigue than if he were free on a straight track.

First.—*The human voice* (*principally*).—The voice is of great assistance in training horses; it is therefore necessary to adopt certain commands, which will be pronounced with a *settled intonation*, in order to obtain always the same results; for it is very important that at a breeder's, at a trainer's, in a squadron or in a regiment, the horses may be handled without distinction by all the men that make up the personnel.

We advise the following commands, because they are most generally employed:

A click of the tongue to move forward.

Steady! steady! to slacken the pace.

Whoa! to stop.

Come here! to make the horse come to the center.‡

The command, *Steady! Steady!* is pronounced in a mild tone, as if it were *stead-y-y, stead-y-y,* and allowing the voice to fall on the last syllable.

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covered in him an extraordinary stiffness, which I mentioned to the owner, offering my services in applying what I believed to be the remedy.

I exercised this animal on the longe one hour daily, half an hour at a time, and three days were sufficient for me to remark such progress in suppleness that I began to be confident. A week after the horse did his work without slipping on the turns, and the abundant sweating, caused formerly by work for a few minutes, had almost entirely disappeared. The result will be far from surprising if one reflects that persons devoting themselves for the first time to the sport of skating, experience at first great difficulty in preserving their equilibrium and tire themselves excessively, because they lack suppleness, or do not understand how to use it, while these same persons, after more or less practice, succeed in standing with ease and scarcely any effort.

It is the same with the tight-rope dancer, the gymnast, etc.

When I ride a well-trained hack I keep him generally at the canter, and I wheel at this gait in the worst paved streets, and this to the great astonishment of persons who know not that my mount, being supple, runs no more risk of falling in wheeling at the gallop than a stiff horse wheeling at the trot.

Persons who follow the races at the small tracks in the environs of Paris have surely had the opportunity a thousand times to hear trainers or owners say that such and such a horse had no chance of coming in first, because he did not turn well. I am convinced that if these horses, often stiff as pokers, had been suppled while young, they would take the turns better, at times very short in these small tracks, and would not find themselves out of the race.

*During the course of the second lesson the horse will have become docile, and the assistant consequently unnecessary.

†Generally two lessons of a half-hour, given in one day, are enough.

‡These last two commands are adopted by the cavalry-drill regulations, in the longeing.

The command, *Whoa!* is pronounced in a firmer tone than the preceding.

The command, *Come here!* is pronounced in the natural way, which needs no particular inflexion of the voice.

The commands should be pronounced loud enough by the instructor to be well understood by the horse, and low enough, however, not to bother other horses that were being trained on the same drill ground.

By this means one will arrive very quickly, and with scarcely any need of indications from the canvesson, or action of the whip, at habituating the horse to moving forward to both hands and at all gaits,* to passing from a fast to a slow gait, and conversely; then to pass from any gait to the halt; and finally to go to the center, whether marching or stopped short on the ring.† In the cavalry, great importance has recently been given to longeing; for following the precepts of the drill regulations, it is by this means that all horses should be trained for surmounting obstacles, and when a recruit experiences some apprehension in the first riding lessons, the instructor should make him mount a horse held on the longe, and drill him in the ring as long as necessary to give him confidence. So then if one would conform to the spirit of the regulations, not only all horses ought to be trained to this exercise, but it would imply even that they were in a state to obey almost solely the indications of the voice; because squadrons cannot provide for as many cavessons as would be necessary, given the considerable number of recruits to whom it would be of advantage to give confidence by this very quick means; the regulations prescribe then that a longe‡ be passed through the two rings of the snaffle, which here does duty for a cavesson. The training by voice then must be thorough enough to do away with the use of strength on the longe, either to slow or to stop short, in the case of the trooper losing his balance; for, if it were necessary to use the longe, the bit would inevitably wound the horse's lips,§ who would, on account of the wound, become hard to manage. This is why—the troop horse, being imperfectly trained, unable to be longed without serious danger to his mouth—it is found impossible to use a means as quick as practical in giving the recruit confidence.

Second.—*The indications transmitted to him by the cavesson.*—The cavesson serves to keep the horse on the track by horizontal oscillations of the longe; to keep him away from the center,‖ to slacken his gait, to stop him short on the track, to punish him by shaking it more or less violently; then, the horse walking or halted on the track, to make him come to the center by the slightest pull of the instructor

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*The cadenced gallop will not be obtainable in the first two lessons, the horse not having acquired sufficient suppleness to move at this gait on the ring.

†This observation is of importance only if the horse be destined for volting exercises.

‡A forage cord is used.

§The snaffle-bit, acting on the lips, parts more sensitive than the forehead, it takes much more judgment to handle a longe attached to a bit, than where the longe is fastened to an ordinary cavesson; again it will be found much better to fix the longe to the front ring of the stable halter nose-band.

‖ It will be useful, when wishing to keep the horse from the center, to destroy by a click of the tongue or by the whip, the retrograde effect, produced by the oscillations of the longe.

on the longe; lastly, to make him change hands by executing a half-circle between the circumference and center of the ring.*

The horse should, while preserving his gait, keep without constraint on the track by aid of the longe,† which will be neither taut nor wavering. Moreover, he ought, without offering the least resistance, to narrow or widen the circle, according to whether the instructor takes or gives the longe.

The fault, quite common moreover, consisting in pulling on the longe, renders this exercise impracticable, because of the serious troubles resulting therefrom.‡ Such a manner of working makes the gaits irregular; further, the animal perturbed, struggling with energy against the force that in spite of him keeps him to the center,§ throws his haunches outward and needlessly tires himself.

On his side, the instructor, who should experience no fatigue, soon finds himself tired out.

Under these conditions it certainly is no mistake to consider this exercise as quite painful for the animal, and in fact it produces more than fatigue. But the true mistake consists in so giving it that, resembling more a series of struggles than an exercise always calmly taken, it gives rise to that unnecessary fatigue, whose inevitable consequence is to sour the temper instead of soothing it and to uncondition the animal instead of developing him.‖

The use of the cavesson as a means of correction is of great benefit in training horses of all ages.

But it is important to know how to employ it and perfectly to understand its worth; for this instrument, useful in the hand that knows how, is harmful in that which is ignorant or that uses it under the influence of anger.

When it is desired to correct a horse by the cavesson, he is made to feel several light jerks on the forehead, produced by vertical oscillations of the longe; but, if it is desired to produce quite a violent jerk, the longe is drawn in with the right hand as far back as possible, the hand is also raised, carrying it first to the front, then backward, to execute rapidly and without slackening the longe, just what one does when it is a matter of throwing a stone hard. In this way, not only is a powerful jerk given by the cavesson on the forehead, but

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*The horse, being at the trot, should still easily attain change of hands without change of gait; but the change of hands at the gallop would demand very long drilling to give the animal the suppleness necessary for easy execution of a change of foot.

†When longeing is given in a circular riding school, the longe, becoming unnecessary in keeping the horse on the track, serves but to regulate the gaits.

‡The cavalry horse, put on the longe with the snaffle for a cavesson, will not be long in having his mouth skinned if he pulls on the longe.

§The instructor, who with the object of inspiring confidence in the recruit should make use of a horse so badly trained to the longe, would increase apprehension instead of causing it to disappear.

‖In places where race-horses are found, longeing should be perfectly applied on account of the value, often quite great, of the colts to which it is given, Now, it is precisely in those places that the trainers have the most difficulty in finding men having sufficient tact to give this exercise.

It suffices, to understand it all, to go some morning and see the heart-breaking sight that the Chantilly lawn offers at the training hour, where each horse is supposed to be given exercise in proportion to his strength and age. Thenceforth, you will not be any longer astonished to meet with so many race-horses with soured tempers, and bearing the marks of numerous blemishes, produced most often by the brutal use of the cavesson.

the longe adds yet to this commotion in striking lengthwise between the nostrils.*

Third.—*The action of the long whip.*—The long whip serves to carry the horse forward, to increase his gait, to keep him more or less away from the center, according as it is shown him more or less, and finally to punish him.

When the horse pulls on the longe, it is due almost always to the whip, which has been unnecessarily and unskilfully used, and which, by frightening the animal, disposes him to elude what holds him, or what amounts to the same thing, to pull on the longe; a very common fault and which makes longeing absolutely impracticable.

It is for this reason that we do not allow its use in the hands of the instructor, before the horse responds to the indications of the voice and cavesson†. Up to this time a riding-whip will suffice the instructor, either to make the horse go forward, or to keep him away from the center; as to the long whip, it will be of use in the sole case that the horse shows unwillingness to move forward; and then it will be held by the assistant, who will conform, as well as the instructor, to the following observations of which the aim is to avoid frightening the horse and his pulling on the longe, through his avoiding the holder of the whip.

The horse ought not to see or hear the whip.‡ He is to feel it only on the hindquarters.§ When it is to be used, it will be held, butt end in the hand, the large end passing out by the thumb, the lash dragging on the ground and following the horse (*Fig.* 1). When you want to make the horse feel it, bring the thumb near the body and throw out the elbow more or less brusquely, as you wish to strike more or less hard. In this way, movements of the arm that might frighten the animal are avoided, and the action of the whip will be sufficient for all training purposes. It will be held, large end passing out by the little finger, when powerful action is desired, in case, for example, it is necessary to use it as a means of correction, which, moreover, I advise be done with extreme discretion, because, if frightened, the horse will very quickly get the bad habit of pulling on the longe and subsequently will with difficulty lose this fault



Fig 1.

Nothing is easier than to correct the horse, who, during the exercise, always tends to narrow his circle by approaching the instructor; it is enough simply to show him the riding or long whip, or yet if necessary, to touch him with it on the shoulder or neck. The horse, exercising in a narrow ring,‖ the whip handle if slipped forward in the hand will often suffice to keep him away from the center. You will thus avoid turning over the whip in order to put the butt end passing out by the little finger, which cannot be done without movements

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*This last method, which differs little from that given by Count d'Aure, was taught us by Major Dutilh, head riding-master at the Cavalry School, who had consummate skill in handling the longe.

†At the end of the second lesson, and before dismissing the assistant, one might take the whip.

‡General L'Hotte, when in command of the Cavalry School, forbade fixing a lash to the long whip in order to prevent its being cracked.

§ Generally below the hocks.

‖Further on it will be seen that the ring ought always to be narrow in the first lessons.

of the arm, with consequent frightening of the animal and making him pull on the longe.*

Fourth.—*The combined action of these different means.*—When training a horse, the voice, cavesson and long whip should all be used together; for each of these means necessarily aiding or replacing one of the others, their combined action, according to need, can evidently but help and assure the horse's obedience.

CHAPTER III.

Method of Training on the Longe.

To train a horse quickly, well and without useless fatigue for the man, that is the end in view.

This result is arrived at by using simultaneously voice, cavesson† and whip, and by not pulling the horse on a large circle at increased gaits until after having obtained from him sufficient obedience at the walk on a small circle.

To this end a longe is first used, that is let out for only about a meter‡; it will thus be easy to keep a horse at the walk and to prevent his frisking about. The longe must have no knots,§ so that it can glide easily through the hand, if desired; further, it must be light so as not to weary the horse when, trained, he exercises on the large circle.

The instructor will make sure that the cavesson is well adjusted under the cheeks, high enough not to interfere with breathing, and that the nose-band is drawn snug enough not to have too much play, which would make its action too violent and allow the cheek straps to mount up and injure the outside eye when exercising on the ring.

On account of the frequent changes of hand, the longe is fastened to the middle ring and not to the side of the cavesson.‖

The instructor will begin by exercise to the left hand,¶ holding the longe in the left hand, and the riding-whip (lash to rear) in the right hand.**

He will have behind him an assistant, whose duty is to help him in the first lessons and to keep the slack to the longe coiled up, so that between him and the instructor the longe is neither taut nor loose enough to drag on the ground.

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*I have said above that the horse ought not to hear the whip. There is, however, one case where that will be necessary: that is when once trained he is exercising on a ring so large that the lash cannot reach him. Then make him hear it from behind to increase the gait, and at the height of his head to keep him away from the center if he refuses to enlarge the circle at the mere sight of the whip.

†The colt should be accustomed to bear the cavesson by leaving it on him in the stable for several hours in succession and by leading him by the longe during several walks.

‡The instructor should look out for kicks with spirited or vicious horses and give them more or less longe.

§The use of the longe, kept quite short in the beginning, allows of being absolute master of the horse, and will do away later with employing force with animals that will have acquired the habit of obedience. Knots habitually put in longes, will then only bother us.

‖If there is no cavesson, the longe is made fast, as mentioned above, to the middle ring of the halter nose-band.

¶The instructor being more conveniently placed when he gives the exercise to this hand.

**The instructor, when going to the ring, leads the horse, either by the snaffle reins, the bridle put on under the cavesson, or by the longe held in the right hand, and keeps the slack of the longe in the left hand as well as the whip, lash to the rear. Before beginning the longeing, he is careful to tie a knot in the snaffle reins and to pass them through the throat latch so as to avoid their dragging on the ground.

To move out at the click of the tongue.—The lesson is begun by accustoming the horse to move forward at the click of the tongue. For this, the instructor holding the longe in the left hand and the riding whip, lash down, places himself at the horse's head on the near side; the assistant, having in his left hand the slack of the longe and in the right hand the long whip, *placed as we have prescribed*, remains quiet alongside the horse's flank; instructor and assistant are thus on a line parallel to the direction of the horse (*Fig.* 2). The instructor pushes the horse's head with his right hand, and then obliges the animal to move as if he wished to make him turn outward from the ring; he

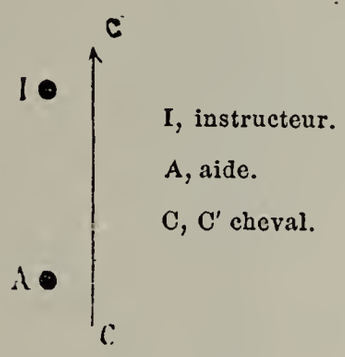


Figure 2.

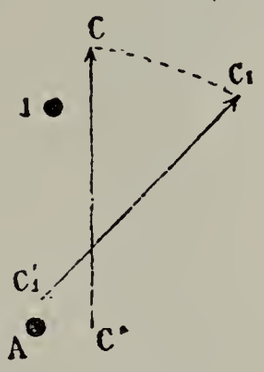


Figure 3.

executes this movement as much as possible while advancing and accompanying the horse in his wheel until the assistant, *without having changed place*, is behind the horse and even *a little to the right of his rump*, if it is desired to describe a circle to the left hand (*Fig.* 3). Difficulty would be experienced with some horses in obtaining the turn through pushing the head from the side toward which it is desired to make them walk. It will be easy to accomplish this by being careful, before the first lesson with the longe, to make them walk, lead by hand, sometimes to the right, sometimes to the left, along a wall or on the track in a riding hall: recourse is had to frequent changes of hand by half-circles or reversed half-circles, and always pushing the horse's head to turn, instead of pulling him toward you (*Fig.* 4). The instructor then makes a click of the tongue, which, if not immedi-

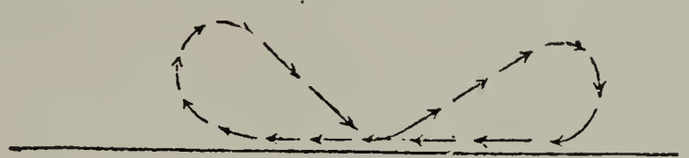


Figure 4.

ately followed by moving forward, is supported by a touch of the long whip more or less strong, according to need, and applied on the right side of the rump. This movement of the whip is easy for the assistant, if the latter is behind and to the right of the rump (*Fig.* 3), where he surely will be if the instructor has made the horse turn sufficiently. We purposely insist on the long whip being applied by the assistant placed outside the ring; if this assistant were within the ring, he would make the horse range his haunches outside and the latter would then pull on the longe, faults that we seek above all to avoid. We also enable the assistant to urge the horse from the outer side of the ring, while recommending, however, that he act so as not to send the animal off toward the center, which is still easy to correct, the instructor with great ease forcing the horse outside the ring.

The effect of the tongue click or whip will be to carry the horse forward. The instructor, remaining in place, allows this movement to go on for a meter or a meter and a half, paying out the longe for this length only, so as to constrain the animal to describe a small circle around him. If the horse walks freely on the circle the instructor gives him a little more freedom, accompanying him on an interior circle and being careful always to keep a little in rear of his head, so as not to precede him in his walk. If, after two or three steps, the horse stops (which most often happens) and faces the instructor, the latter must also avoid trying to start him forward; he must, on the other hand, draw him to himself, if possible, yield him the longe, give him confidence by caressing him, then begin over the lesson by again placing himself as well as the assistant on a line parallel to the axis of the horse. This very important lesson requires much patience on the part of the instructor; but it is rarely that, repeated three or four times, it does not suffice to make the tongue click understood, which is next used with success when the horse wishes to stop on the *small circle* that you seek to make him describe *at the walk*. The assistant, might, if necessary, follow the horse, but should describe a circle slightly exterior to that traced by the horse, and consequently larger, to absolutely avoid making the horse pull on the longe.

In general, the instructor makes this whole lesson easier by making use of a corner of the riding hall.

To stop.—The lesson is continued in teaching the horse to halt on the circle.

To come to the center.—He also must be taught, at the signal *Come here*, and at the least pull of the instructor on the longe, to go to the center.*

One must also be very exacting in this last movement; if the horse arrived at some paces from the instructor, stands fast, refusing to advance, you must instead of yielding by going to him (as is often the tendency), preferably step back a pace or two, make him step aside to get him in motion, and seek to draw him to you; if the horse still stands fast, the assistant is ordered to pass around behind to urge him toward the center, but making a circuit big enough not to frighten the horse before being squarely behind him. The animal is at once rewarded for his obedience by yielding the longe and then by a caress or a handful of oats.

The movements when well executed to the left hand will be repeated to the right hand, according to the same principles and by inverse means, taking care to exercise the horse to the latter hand as much as to the former.

To change hands.—To change hands the instructor makes the horse come to the center, drops the longe and goes behind the assistant, passing the riding or long whip from the right to the left hand.†

He is careful to make the change behind his back in order to avoid the horse's seeing the whip, at which he will not fail to be frightened. Whenever the instructor should wish to drop the longe for any reason, he will be careful, in order not to let it drag on the ground, to give the assistant the part of the longe that he holds in his

*In the beginning, the first steps necessitating some jerks that may frighten the horse and make him tend to pull on the longe, it is well when he has obeyed to make him come quite often to the center.

†If the long whip is held as we have laid down, it is easily passed from one hand to the other without alarming the animal.

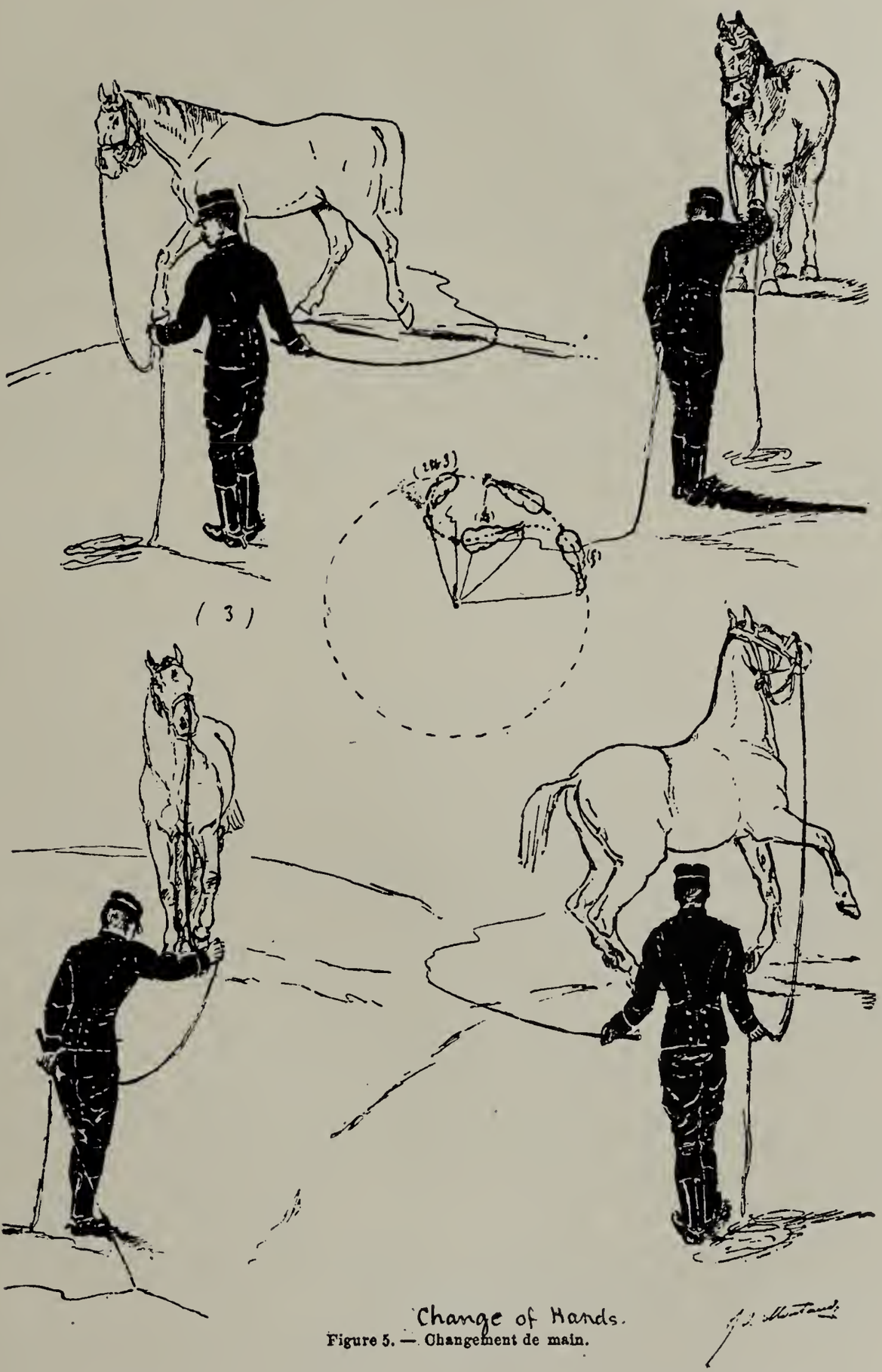


Figure 5. — Changement de main.

hand, and the latter remaining in place will, for the moment, direct the horse.

To accustom the horse to keep away from the center and on the circumference—(Progression to follow.). The instructor will accustom the horse to bear away from the center on to the circumference; to this end, while himself remaining quite still, he will start him moving by a click of the tongue* at the same time that he makes him feel the riding-whip on the shoulder.

This action of the whip will keep the shoulders away from the center, making the horse pivot on the haunches. The instructor thus finds himself quite naturally behind the horse and in a perfect position to urge him on.

Note that in this movement the horse refuses his shoulders and that the haunches remain an instant within the circle, which makes it less easy for them to escape outside.

The horse becomes quickly accustomed to bend on the circle.

After two or three lessons of this nature to the right hand and the left, use of the riding-whip will become unnecessary; it will be enough for the instructor to push the horse's head by placing the right hand† under the left cheek if it is wished to circle the horse to the left.

The horse is next exercised in going away from and approaching the center, as the instructor gives or takes the longe.

Exercise at the walk and trot.—The horse is yet to be exercised:

First.—To pass from the walk to the trot and conversely, then from the trot to the halt.

Second.—To take the trot from the halt, either on the ring or in leaving the center for the circumference.

Changing hands on the circle (*Fig.* 5).—The horse is to learn to change hands on the ring by a half-circle. For this movement, the horse walking and on a circle at first of small extent, the instructor quits the longe, passes behind the assistant, retakes the longe with the right hand, stops and draws the horse so as to make him face the center, then he compels him immediately to end his half-circle by stepping a pace or two to the right and by extending his right arm to draw the animal in the new direction.

For the first few times, in order to finish the half-circle, the assistant should be made use of; thereafter the long whip and a click of the tongue will suffice.

When the horse knows how to execute the changes of hands on the large circle, the assistant will become unnecessary.

In the exercise to the left hand or the right, the instructor, according to the hand to which he is conducting the march, leaves on the ground and to his left or right, the slack of the longe, around which he walks in accompanying the horse on the circle, just as he walked around the assistant.

He may just as well have the slack of the longe in the left hand and manage the horse with the right, which also holds the whip; but the bulk of the longe and whip together obstructs and makes this process tiresome and not very practical.

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*If the horse does not understand, of course the instructor has recourse to the assistant, in order to leave the horse in no doubt as to what is asked of him.

†The hand that pushes the horse's head is precisely that holding the long whip. It is then important to hold the latter as laid down, that is so as not to bother the instructor and not to frighten the horse.

The horse is first exercised at the walk on a narrow circle, then at the trot on a large circle, in making repeated changes of hands, that is to say, the instructor allows him to go for five or six paces only between each change of hands and thus obtains figures of eight slightly elongated. The instructor, besides, does not tie himself down to change the longe to the other hand at each movement (*Fig.* 6).

NOTE.—When longeing is given a well-trained animal and only with the aim of taking the place of exercise, it is given on a circle as large as possible and then the instructor can, while remaining on the same spot and without turning on himself, hold the longe with but one hand and pass it alternately from one hand to the other to make it pass around the body, according as the horse advances on the circle. In using this latter method the instructor will do well to leave the whip on the ground near him, as it is then difficult and inconvenient to use.

Exercise at the gallop. (*Progression to follow.*)—Instruction at the trot being ended, it will generally suffice in order to obtain the gallop, to increase the pace. But if the horse, although judged sufficiently supple, takes the gallop with difficulty,* starting at the trot must be

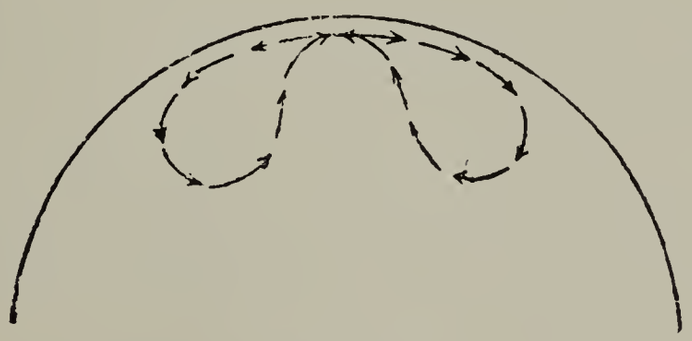


Figure 6.

firmly insisted upon, the horse going from the center to the circumference. By being more and more exacting in this exercise, one or two breaks into the gallop will quickly be obtained, after which the horse should be stopped, brought back to the center and made much of.

This exercise will be alternately repeated to both hands; and in this fashion, prompt obedience will quickly be obtained from the horse when he is on the ring; he will be exercised there in passing from the trot to the gallop, from the walk to the gallop, from a halt to the gallop and conversely.

If in spite of the precautions taken in this lesson the horse was frightened at the whip, and consequently had a tendency to pull on the longe, the exercise must be ended, resuming the exercise at the walk on a narrow circle.

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*The horse that must be struck sharply with the long whip to force him to take the gallop on the ring, will soon pull on the longe, throw his haunches outward, gallop false or disunited and tire himself out unnecessarily. It is to avoid these faults that we advise giving up with such a horse the start at the gallop on the ring, and insisting firmly on the other hand on the start at the trot made in leaving the center; for in that place the instructor, easily making use of the whip, without being seen by the horse, will be able both to increase his demands for abruptly taking the gait and to obtain the gallop, which will be the more steady as the use of the whip becomes the more unnecessary.

II. TRAINING AT OBSTACLES.

CHAPTER I.

Benefit of Training the Horse at Obstacles.

Jumping is a movement as natural for the horse as walking, trotting and galloping.

None contest the benefit of training in order to develop and regulate the different gaits. Equally is training necessary for jumping, because for this action, more than any other, it is important to make the horse strong and skilful and to avoid certain faults of which the consequences, for very reason of the violence of the effort, are always grievous. So it is wise not to bring up to obstacles the horse that has not been taught to jump.

Willingness and skill, which are two essential qualities and going one with the other, are obtained only on condition that the horse in jumping experiences neither fatigue nor unnecessary suffering.

To arrive at this result it is necessary that the horse be trained to jump, firstly to supple and strengthen certain muscles, such as those of the shoulders and forearms, which have the hardest work in this action; secondly, to get and keep the habit of always making the jump in the way it is done by all quadrupeds in general when free, before anything has happened to contend with their natural ways.

But let us hasten to say if a horse endowed with good disposition or trained to fine condition for jumping were often subjected to an unskilful hand, depriving him of free use of his strength, he would find it soon impossible to execute the jump aright; following upon unnecessary suffering and fatigue, consequence of badly performed jumping, he would quickly lose the freedom and skill acquired through the advantages of training.

Most often training over obstacles is neglected because few know enough to appreciate a good jumper. One hears this qualification generally given to horses that will jump willingly, in a riding school or on a drill ground, some obstacles perfectly known to them and always placed in the same way, but that being insufficiently instructed will refuse to jump in another riding hall, on another drill ground or in the open field. There will be little concern to know whether the horse has been drilled enough for the jump to have become as little tiring as possible for him; small note is made of the form the horse shows in jumping; yet there lies the cause of greater or less amount of fatigue, and resultant possibility of repeating the jump more or less often.

If the horse rushes at obstacles instead of clearing them quietly, it will be said that it is a proof of his love of jumping, whereas it is the forced consequence either of suffering occasioned by injuries or defective conformation, or most often by a too tender mouth or by the rider's bad hands, or through these two causes combined.

Neither is it considered that this so called qualification makes jumping dangerous and that a horse so unhandy is hard and disagreeable to manage as well for the military man as for the hunter.

Such is what is often said by those who use horses in countries where obstacles are of little moment and quite seldom met with; in this case truly, the animal, provided always of good temper, will patiently bear the suffering, relatively trifling, occasioned by badly executed but infrequent jumps. If on the other hand one happens to risk himself in hunting regions, where, during a half hour's gallop high obstacles must be cleared every 200 meters, the animal thought

such an excellent jumper, after having decided to clear the first obstacles, soon is unwilling to further endure, for very reason of the repeated jumping, the suffering occasioned by his bad methods; soon he is seen to shrink if the instinct of self-preservation overcomes willingness, or to fall exhaused if willingness masters the instinct of self-preservation. Obstinacy or premature breakdown are the consequences of this suffering and useless hardship. These illusions lost, if one persists in going over regions thus sown with obstacles, the necessity will be seen for subjecting the horse to training that brings him also to perform *the regular jump in which he undergoes neither suffering nor needless fatigue.*

It is certain that sluggish, bad tempered, blemished horses, or those having defective conformation are little suited to going over such difficult country; for a high jump often repeated, though perfectly taken, always produces an amount of fatigue and suffering that taxes the physical and moral qualities of the animal.

It is equally certain that in this last category of horses, one too often given to the army, or used in hunting regions that do not lay claim to choice temperaments, nearly all the individuals will be rendered capable of giving excellent service, and that without increasing their failings of temperament, or developing the blemishes with which they are afflicted. But it is necessary, after having taught them *regular and methodical jumping*, that the rider succeed in offering no opposition to its execution, which then will occasion no unnecessary suffering nor fatigue.

Some horses possess great aptitude for jumping, either enjoying particular conformation, or as most happens, having been raised in regions cut up by obstacles.

Major Dutilh, the celebrated riding-master, who was our instructor, advised us to guard against the mistake consisting in belief that methodical instruction might have harmed such a fortunate disposition.

CHAPTER II.

What is Meant by a Good Jumper.

A charger or hunter jumps well *when he is capable of clearing freely at all gaits*—that is at the walk, trot, ordinary gallop and full gallop—obstacles of all kinds, in greater or less number; then, when the *obstacle passed, he readily retakes* the gait that the rider desires, and that *in tiring himself the least possible.*

It is enough to have followed a few hunts to be convinced that only a horse fulfilling all these conditions can be termed a good jumper.

In fact, is it not quite wearisome to have a mount, obstinate before or avoiding an obstacle, sometimes of small account, because this obstacle is not like those he has been in the habit of taking, or is not placed in the same way?

Is it not indispensable that a hunter or charger be tractable enough to be able to jump at different gaits, and the obstacle passed, retake that desired by the rider?*

*At the time we were following the provincial steeple-chases, together with those of Auteuil and the suburban tracks (which were reduced then to la Marche and le Vésinet), we ascertained that the horses ordinarily running on these tracks, when they went to contend for the prizes awarded in the provincial meets with the almost certainty of gaining an easy victory over animals of inferior order, sometimes found themselves quickly enough out of the running or

It is also evident that if the horse tires himself needlessly in jumping, he can be made to take but few obstacles; if necessary to attempt many, the animal, under the influence of fatigue, and consequent to suffering, will refuse, will avoid or will be prematurely played out.*

CHAPTER III.

Analytical Study of Jump of Horse at Large.

It is not a matter of indifference whether the horse jumps in this or that way; it is important on the other hand that he perform this action in a way to do away with all useless effort.

In order to study the jump it is necessary to examine the animal at large, because then nothing impedes him and he goes at it following nature's rules.

The horse jumps by the combination of three things:

First.—Dash.

Second.—Muscular effort.

Third.—His own weight differently distributed following the successive phases of the leap.

It is this last action that it is important to study in a special way, in order to demonstrate, that if there be no opposition at its beginning to take into account, the jump will be made almost without effort and consequently without fatigue.

We shall begin by studying the movements of the horse jumping an obstacle of some height *at the walk*. In fact, at this pace, the animal finding himself nearly deprived of dash, the double action of muscular effort and distribution of his own weight in the different periods of the leap, will of necessity be much more marked; consequently movements that the different parts of his body must make will be more apparent and easier to study.

First.—*Study of jump of the horse at the walk.*

We shall distinguish three phases in the jump:

a—*The take-off.*

b—*The leap proper.*

c—*The instant when the horse reaches the ground on the other side of the obstacle.*

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refused to jump obstacles less worthy of notice than those cleared daily by them on the tracks that they habitually frequented, and that because once become willing over artificial obstacles made of the model of those found on these tracks, their training was considered as ended.

How many times have we seen horses trained solely with a view to these suburban tracks, refuse to take, during ride or hunt, natural obstacles, whether they may have been frightened by the nature of the obstacles, or may never have jumped at a relatively moderate pace!

These faults are met with much less often to-day that the suburban tracks are many in number, and that for this very reason horses jump over a very great variety of obstacles.

*In the important steeple-chase, set apart for three-vear-olds and annually run at Auteuil, each stable believes in the chances of its representative because often he has been chosen from the animals who have in a flat race shown certain capacity and then because he seems to have taken quite well to being a jumper.

Fifteen to twenty horses start in this race, of which the stakes are very high, but yet scarcely four or five are to be seen on their feet at the finish.

Does not this result seem to be the consequence of superficial training? The animal jumps marvelously well the few small obstacles of the training ground, and that at a relatively moderate gait; but becoming tired of jumping, he cannot long keep up a severe pace, such as is generally set in this race.

If training were not generally considered ended before being sure that jumping does not tire the horse, there would certainly be fewer bitter disappointments.

a.—*The take-off.*—On coming upon the obstacle at the walk, the horse hastens his last steps to get a little start and thus diminish the muscular effort necessary to clear not only in height, but also what he must cover in distance when he makes a high jump.*

He gather himself at the same time by getting his hind quarters under him; then he draws back his head and neck on the trunk to carry back their weight upon the hind quarters and thus relieve the forehand, which has every facility for being raised; this facility is the greater the more pronounced has been the withdrawal of head and neck. This withdrawal has been preceded by a movement of extension, which has given some swing to head and neck, then has aided and regulated their withdrawal upon the trunk (*Fig.* 7).

This motion is hardly apparent, but none the less exists, and the horse conforms, in this play of head and neck, to what man does with

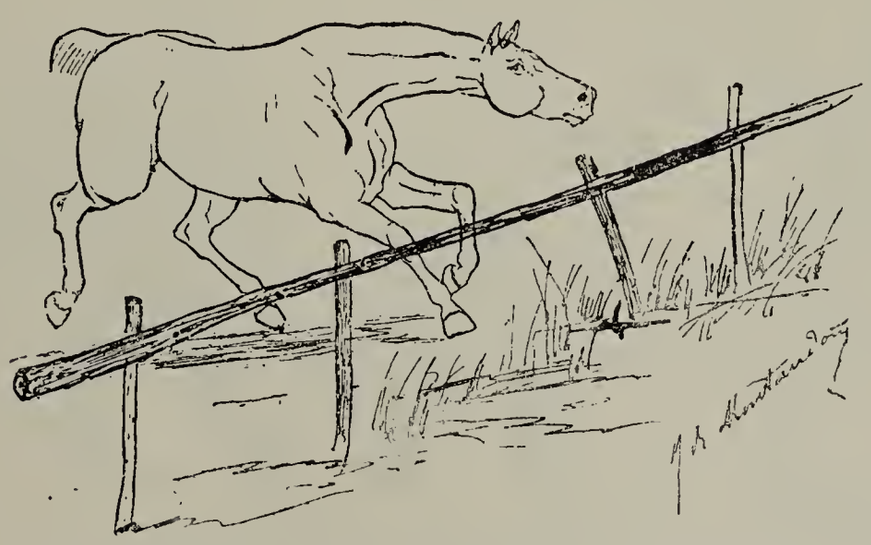


Figure 7. — Extension de la tête et de l'encolure qui précède leur retrait sur le tronc.
Figure 7. Extension of head and neck which precedes their withdrawal on trunk.

his hand when he wishes to throw a stone far: first he extends forward the arm and hand that holds the stone; then he draws the arm back as far as possible, in order next to carry it forward again and launch his projectile.

The more extended the first motion the more so likewise will be the second; and the more extended the second motion the more force the third will have to throw the stone afar (*Fig.* 8).

The extension that precedes the withdrawal of head and neck upon the trunk is of great importance also as regards the safety of the jump, since it allows the animal to take good account of the obstacle he is about to take.

b—*The leap proper.*—Thanks to the disposition of the hind quarters, which come into play and are overloaded by the withdrawal of head and neck upon the trunk, the horse easily raises the forehand—a motion due also largely to the tension of the shoulders filling in part

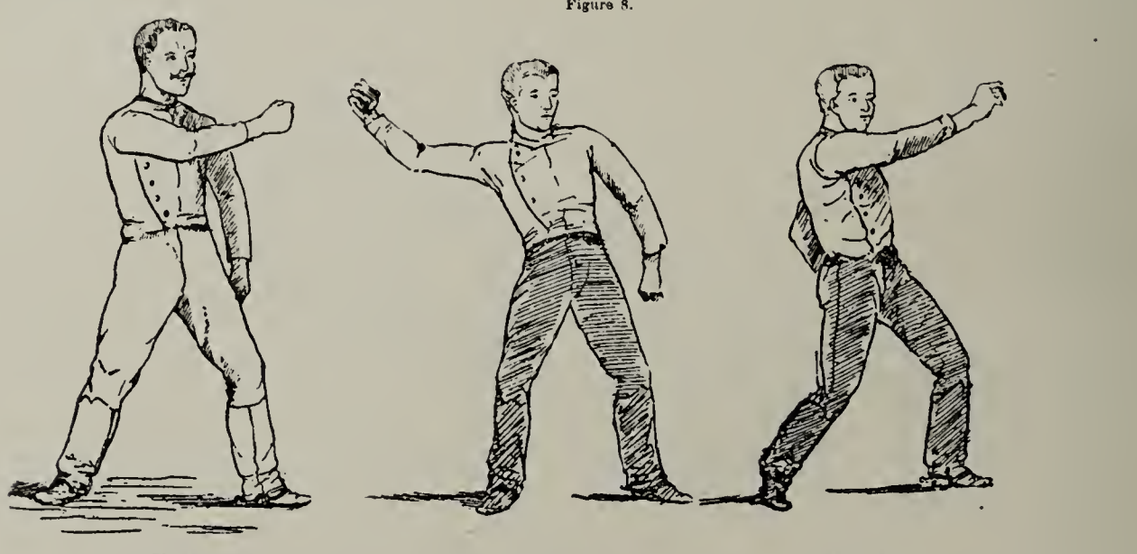
*The space the horse covers is measured by the distance comprised between the imprint left on the ground by the foot that was nearest the obstacle before taking it (quite generally a forefoot) and the hoof print which was likewise the nearest to the obstacle after it was cleared (almost always a forefoot). This space is considerable: at an ordinary gallop and for ordinary obstacles also, it varies between 2 m. 80 and 4 m. 50. These observations will perhaps astonish; they have, however, been made upon many horses.

the functions of a spring, and to the simultaneous bending of the fore limbs (*Fig.* 9).

The animal has not yet finished raising the forehand when immediately he relaxes his hind quarters, making a vigorous effort. This spring, joined to the start given by hastening the last steps, allows the fore limbs, folded back under the body, to reach a sufficient height to be able to pass above the obstacle.

The motion of extension of the hind quarters is still incomplete when the horse extends the forehand, throwing forward his front legs and stretching out as much as possible his head and neck. Next he folds up under him the hind legs to prevent their touching the obstacle* (*Fig.* 10).

Figure 8.



The action of extending the forehand and folding up the hind legs under the body throws weight forward; the forehand, which just now was lighter than the hind quarters, next becoming heavier, the animal then seesaws; the forehand goes toward the ground, the hind quarters are gathered while in the contrary direction.

To sum up, to carry the forehand over, the horse shifts the greater part of his weight upon the hind quarters; and to carry over the hind quarters, he shifts on the contrary the greater part of this same weight upon the forehand.

The hastening of the last steps, joined to the extension of the hind quarters, gives the necessary dash to cover the distance.

c—*The instant that the horse reaches the ground on the other side of obstacle.*—The forehand having drawn over the hind quarters in a seesaw movements, the hind legs reach the ground after the fore legs and are placed more or less near the latter.

*Some horses, instead of folding the hind legs under the body, let them go as if for a kick, which, moreover, is quite infrequent and seems to be connected with the case where the horse may find need of carrying back weight to the rear, because he has extended the forehand too much. This way of acting disappears according as the horse acquires the habit of executing the jump with regularity.



Figure 9. — Enlever de l'avant-main (1re phase).
Figure 9. Raising the fore-hand. (1st phase)

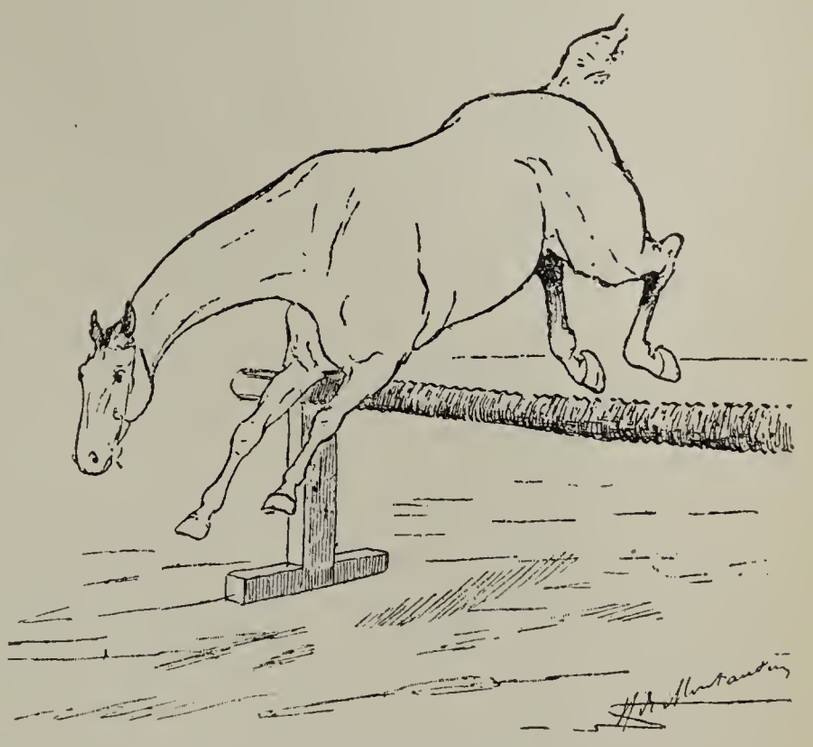


Figure 10. — Extension de l'avant-main (2e phase).
Figure 10. Extension of fore-hand (2nd phase)

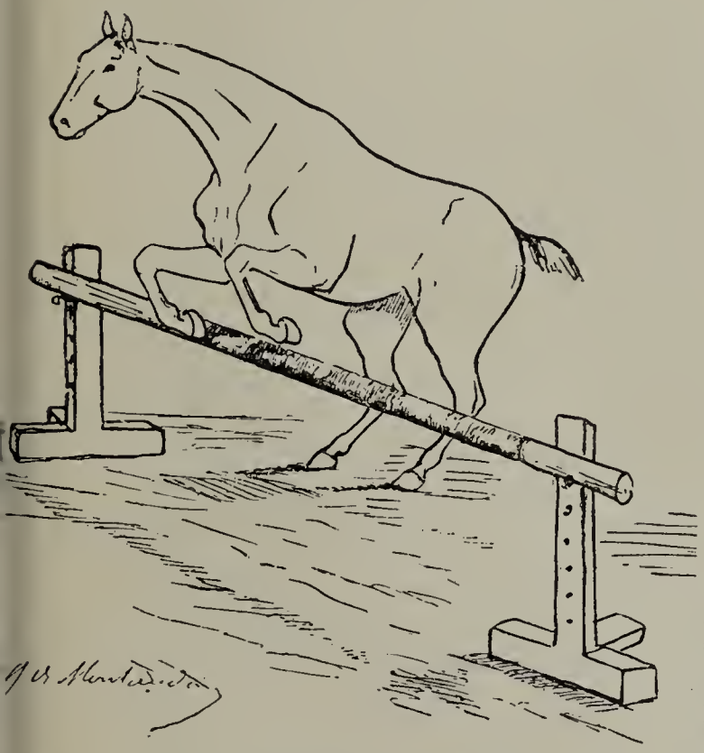


Figure 11. — Cheval au pas et s'enlevant près de l'obstacle.
Figure 11. Horse at a walk and springing near obstacle.

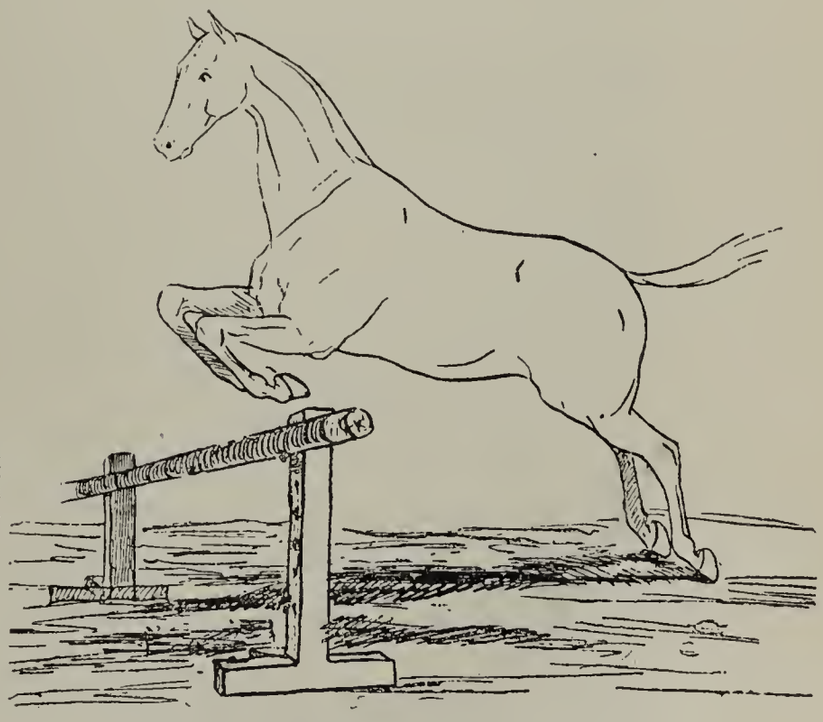


Figure 12. — Cheval au galop et s'enlevant loin de l'obstacle.
Figure 12. Horse at a gallop and springing far from the obstacle

The head and neck resume then their normal position and the animal continues his course.

Second.—*Study of jump of the horse at full gallop.*—To clear an obstacle at the walk, the horse, almost deprived of any start, must spring near the obstacle and almost vertically (*Fig.* 11).

In fact, were he at this gait to spring from afar, he would have to expend, for lack of a start, a considerable amount of muscular energy to cover the necessary horizontal distance; this amount of energy might even be beyond his strength.

At the walk, taking off near the obstacle is then essential for the jump to be executed under the best conditions.

On the contrary, at the full gallop the horse springs further off, and no longer perpendicularly but obliquely to the ground, so as to rise if on an inclined plane to the height necessary to clear the obstacle (*Fig.* 12).

These two conditions, moreover, are conjointly responsible for each other. Indeed, if the horse springs near the obstacle he must perforce rise almost perpendicularly to the ground. Therefore in this case he shows perforce a stopping, under penalty of striking the obstacle, and it is this stopping that it is important to avoid in jumping at full gallop. At this gait, in fact, stopping, shown before the jump, presents serious difficulties: it makes the animal lose all the benefit of his speed and obliges him, so to speak, to jump only by the method in which he causes the distribution of his own weight to change, and by muscular effort; consequently he experiences needless fatigue. Further, if we consider the race-horse, stopping, gives rise, beyond the useless fatigue we just noticed, to that which he undergoes in striving to catch up between obstacles with his competitors, who have not slackened the pace in jumping.

To sum up, the spring that the horse makes in jumping at the full gallop should be made like one of the leaps of the gallop in which the forehand should rise enough to reach the height of the obstacle.

Just as at the walk, this result is obtained by withdrawal of head and neck upon the trunk and by the play of the hind quarters which come into action more or less according as the obstacle requires more or less strength. The difference is that at the walk the preliminary extension of head and neck that causes their withdrawal upon the trunk is much more marked, while at the full gallop this extension is scarcely appreciable. It exists, nevertheless, quite as useful for ease of jumping and indispensable for its safety.

Third.—*Study of jump of horse at intermediate gaits.*—Knowing the way the horse handles himself in jumping at extreme gaits it is easy to deduce therefrom what he ought to do, according as the pace approaches more nearly the walk or full gallop.

The slower the gait, that is to say, the less start there is, the more pronounced is the play of head and neck, the more muscular force also must the horse employ; consequently, the more he tires in jumping.

On the other hand, the faster the gait, that is to say the more there is of a start, the less pronounced is the play of head and neck, the less muscular force also must the horse employ; consequently, the less he tires in making the jump.

[TO BE CONTINUED.]

KUROPATKIN AS A COMMANDER.

By Sven Hedin in London Times.

THE first time I personally had the honor to meet General Kuropatkin he was *voyenniy natchalnik*, or military commander, of the new province of Transcaspia. That was in October, 1890, and at Askabad, where he had his headquarters. When I called upon him my overcoat was taken charge of by a Cossack and I was ushered into a large hall, where I was received and my visit announced by an aide-de-camp. The walls of the noble apartment were adorned with Asiatic weapons, ancient and modern, and with portraits of the Imperial family. After I had waited a little, the general entered, dressed in full uniform, for he was about to preside at a meeting of some sort. He is a short but strongly-built man, with a black beard and small but kindly and intelligent eyes. I was just then setting out on my first journey to Kashgar, and Kuropatkin gave me a good deal of information about the dangerous pass of Terekdavan. Although I expected to find it buried in snow, he did not attempt to dissuade me from the journey; a Northerner would not permit himself to be deterred by either snow or cold. When I let fall the remark that upon my return home I intended to write a book about Turkestan, Kuropatkin replied, humorously, that there were no secrets in Askabad. I was at perfect liberty to go where I liked; I might freely visit all the institutions in the town, might count the soldiers in the barracks, as well as the big guns, the rifles and the cartridges in the magazines, sketch whatever I thought fit, and he added, "you may even write articles about it all to the *Times* if you like." If I met with any difficulty I had only to report the matter to him and he would see me righted.

Since then I have had several occasions of meeting General Kuropatkin, and when journeying to and from Asia have never failed to call upon him, either at his house in St. Petersburg, or at his datcha, or "villa," on one of the islands of the Gulf of Finland; but on the other hand, although I have been invited to visit him on his estate at Terijoki in Finland, I have never been able to do so. His villa, which is only twenty minutes' drive outside of St. Petersburg, is severely simple, not a trace of luxury about it: a well-to-do tchinovnik would hardly be able to abstain from turning up his nose at it. And yet the general is a millionaire; but he is too honest and too proud a man to employ his wealth in ministering to his own selfish pleasure—such a use for it he would look upon as absurd. He has consistently set his face against pomp and ceremony, and endeavored, even while at the summit of honor and power, to preserve the simplicity of the soldier; indeed, it has seemed to him a simple matter of duty that the man who has the leading of the army ought, in point of both conduct and manner of life, to set an example to the men under his charge. And even now, when the destinies of Russia are in his hands, when he is leading her armies through showers of shot and shell, when his name is daily upon thousands and thousands of lips all the world over, and heads the columns of all the newspapers in existence—even now he is distinguished by the same outer simplicity; no *recherché* dishes, no choice wines are allowed to appear on his table; he makes no claim for special comforts, but leads the simple soldier's life; he shares the difficulties and troubles of his men, takes an interest in the well-being of each company, sees to it that no man wants for anything, visits the

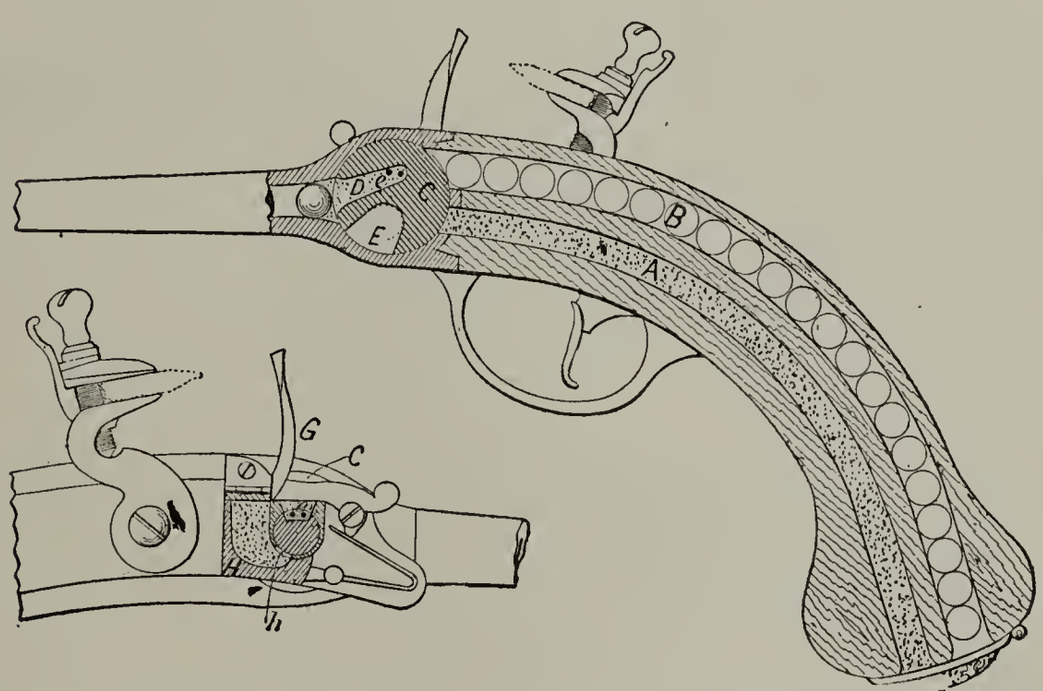
sick in the hospital, speaks words of kindness and encouragement to all, has time for everything, and is at all times and under all circumstances calm and unruffled. I am convinced that the Japanese must have an unbounded admiration for their great opponent.

Kuropatkin has always been a very hard worker, but even when Russian Minister of War he did not forget the interests of his earlier life. He has always remained a keen geographer, and has constantly kept himself abreast of the progress of Asiatic discovery. I have more than once had occasion to wonder at his knowledge in this field. For instance, he has always closely followed even in detail every phase of the Lop Nor controversy. In his book "Kashgaria" he describes the discoveries which Prijevalsky made in the region of that lake; but when I subsequently showed him the untenability of the great Russian discoverer's views, Kuropatkin was one of the few Russian scientific geographers who was convinced and gave up his countrymen's standpoint. Once, after I had been expressing to him my regret at having been forced to begin the dispute about the Lop Nor with the Russian geographers, he answered quite calmly, "It will do them good to have a lesson."

In April, 1899, I met Kuropatkin several times. On one of these occasions we were sitting at his writing-table discussing my contemplated journey, when a Cossack entered, bringing a huge bundle of papers in a sealed portfolio. While the general was turning them over I took the liberty of asking him what was the meaning of the peculiar marks in blue pencil which I saw on the margins. Kuropatkin told me that they were the military reports of the week, which the Czar had just read, and that the blue pencil marks were made by his Imperial Majesty's own hand. One particular mark meant "I approve"; another expressed the opposite; while a third signified "I want further details," and so on. I gave utterance to my astonishment that the Czar found time to read through all those reports, whereupon Kuropatkin answered: "Yes, and it is even more astonishing how he finds the time for reading through all the reports of all the other ministries." Once when I was dining with General Kuropatkin he had as a guest a colonel who had recently returned from Fashoda. After dinner the latter was to present to the Minister of War two Cossacks, who had exhibited unusual proofs of courage and presence of mind by swimming across the Nile on some important errand. Kuropatkin invited me to accompany him to witness the ceremony which was then about to take place. The Cossacks were waiting in the vestibule, each wearing the gold medal which he had that day received from the Czar. The general at once addressed the two men in a short speech, thanking them for the example they had set to their comrades in the army, and then gave to each man as a memento a gold watch in a case and a roll of gold rubles.

It was interesting to observe with what energy and vigor Kuropatkin directed the military and even the civil affairs of his province. Everything worked like clockwork, with the greatest regularity and punctuality. Every Tuesday he directed the maneuvers of his troops, not seldom covering a march of twenty-five miles. On the following day he called his officers together and criticized the evolutions of the preceding day's march. In his Cossacks, their troubles, their wishes, their needs, he took a direct personal interest, and always liked to see happy and contented faces about him. But on the other hand, he maintained a rigid military discipline, and would tolerate neither laxity nor weakness.

In November, 1890, I saw Kuropatkin again in Samarkand. I remember, as well as if it were yesterday, witnessing the arrival at the railway station of the governor-general, Baron Vreksky. Kuropatkin met him at the train. The two distinguished men took their seats in an open carriage, and away they galloped behind a troika of coal-black horses to the governor's palace. In front and behind the carriage was escorted by a troop of Cossacks bearing long pennoned lances. The people made way and greeted respectfully as the cortége swept along in a cloud of dust between the beflagged façades of the houses. On the following day I was invited to a military dinner with the governor-general. Among the officers present at the table there were three who have especially distinguished themselves in the history of Russian Turkestan. The first was Kuropatkin himself; the second Grodekoff, who, in 1878, undertook the famous ride to Herat and described the conquest of the Turkoman country by the Russians; and thirdly, Rasgonoff, who was a member of the mission that was sent in 1878 to the Ameer Shere Ali Khan at Kabul, a mission which at the time caused a good deal of uneasiness in England.



SECTION THROUGH WETSCHGI'S MAGAZINE PISTOL.

Made about beginning of eighteenth century.

MULTI-FIREARMS OF ANCIENT TIMES.

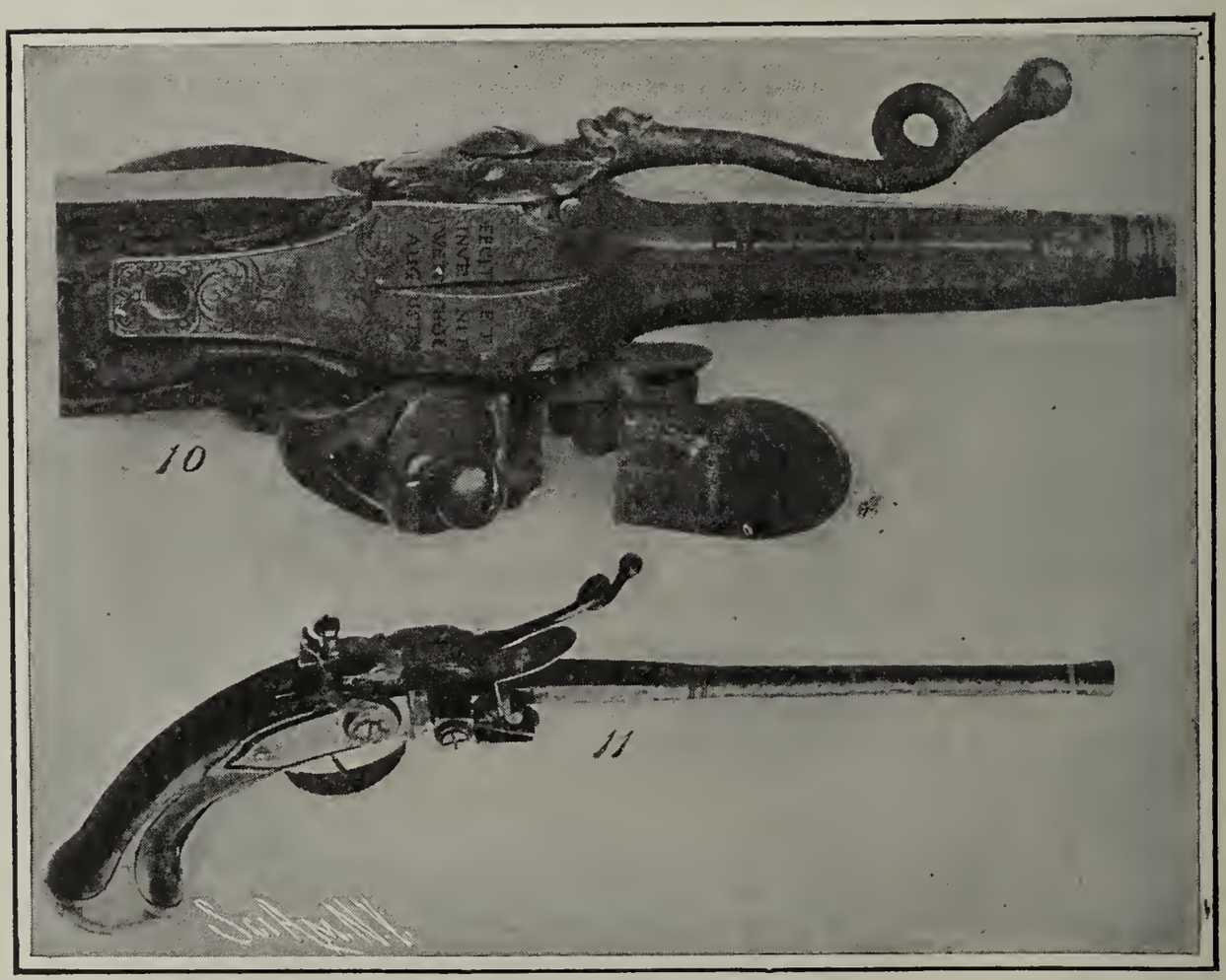
(*The Scientific American.*)

A VERY rare and curious specimen of an ancient repeating flint-lock pistol has lately come into the possession of Mr. Sumner Healey, of this city. The pistol, of which we produce a drawing and photograph, was made at the end of the seventeenth century by Wetschgi Augustus, who died in Vienna A. D. 1690. The pistol contains two magazines, one, *A*, which contains the powder, and the other, *B*, contains the balls, twenty-one in all. An additional priming magazine *H* is on the outside of the lock and close to the flash-pan. To load, one depresses the muzzle and turns or rotates the cylinder *C* by means of its exterior lever. One of the balls contained in the magazine *B* drops into the cavity *E*, which

comes opposite *B*. At the same time the powder chamber *D* of the cylinder is filled with powder from the magazine *A*. When continuing to rotate the cylinders, the ball contained in the cavity *E* falls into the funnel-shaped breech, and by a continued motion of the cylinder the cavity *D* is brought opposite the breech of the barrel, where it remains until the shot is fired. During this time the reduced prolongation of the cylinder at the exterior rotates and scoops from the magazine *H* a sufficient quantity of powder to prime the flash-pan. A continued movement closes the flash-pan cover *G* and brings the hammer to full cock. When the pistol is fired, the priming charge shown at *E* communicates the fire through the two small holes to the charge contained in the cylinder.

The weapon bears the following inscription:

FECIT ET INVENTIT WETSCHGI AUGUSTAE.



WETSCHGI'S PISTOL.

10. View of priming mechanism. 11. General view of pistol.

It may be readily seen that unless the revolving cylinder is accurately fitted, the danger of using such a weapon must be great, the powder in the butt, sufficient for twenty-one charges, being separated from the barrel only by the revolving cylinder, which serves as a false breech for the barrel.

A weapon of like construction to the above is in the Musee d'Artillerie, Paris, and is catalogued as M1766, but very few of these weapons, either gun or pistol, are known to be in existence. Among others who built similar weapons are Jan Sander, of Hanover, and Antonio Constantin, of Ferrara, Italy.

From a military point of view, the design of the arm gives evidence of being far in advance of its time. If everything works properly, the arm can be fired nearly as quickly as a modern weapon of to-day. Very little time is required for charging, and it is only necessary to fill the compartments with bullets and powder through the orifice *F*, with no counting and measuring. The charges are automatically measured, and the load is fully as accurate as that of metallic cartridges.

Altogether, the design and workmanship of the pistol make it a most valuable and remarkable relic.

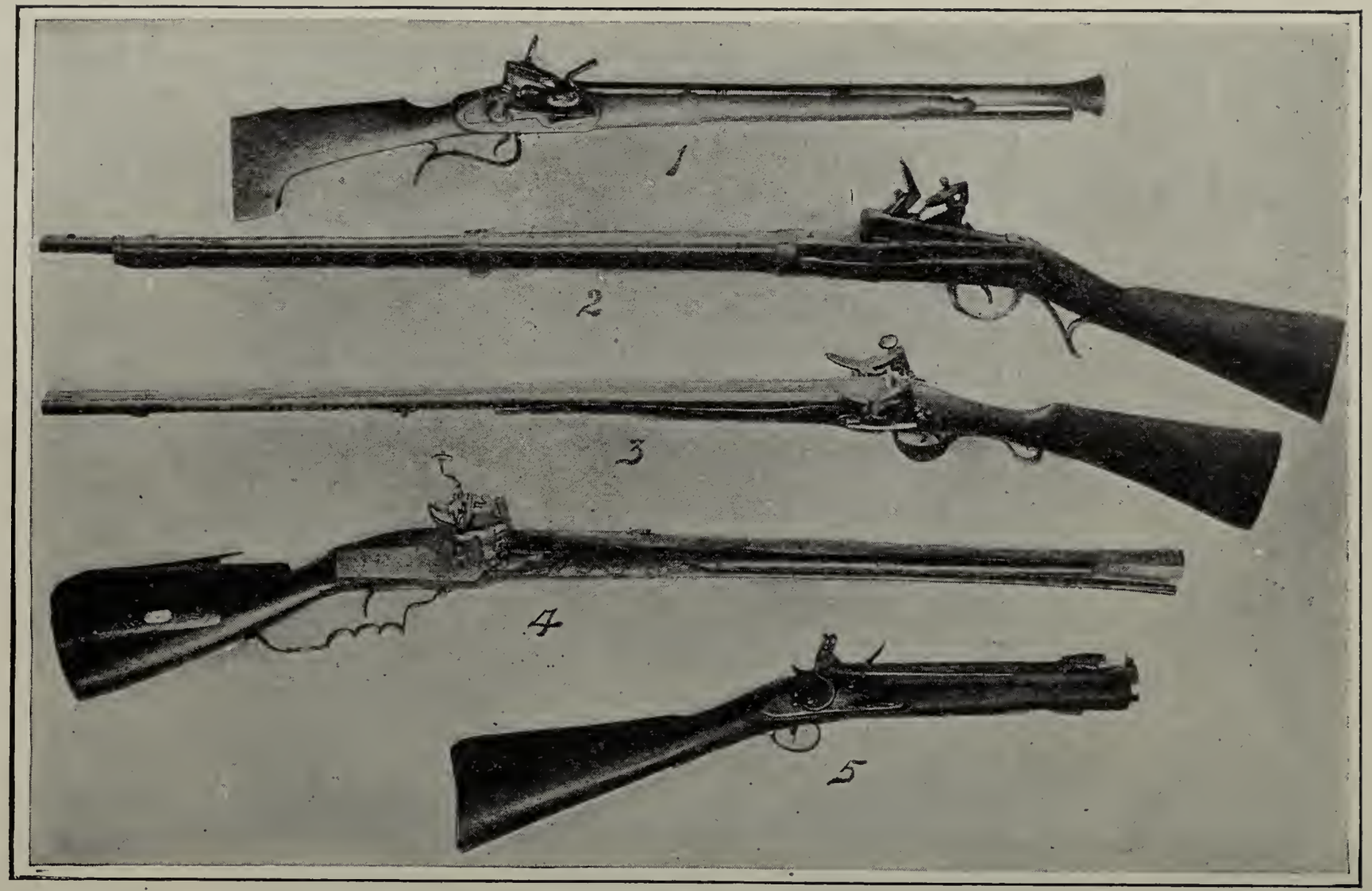
Another pistol in the same gentleman's collection is a four-shot flintlock pistol (Fig. 7). The weapon is evidently of English origin,



ANTIQUE PISTOLS.

6. French two-barrel revolving flintlock pistol made about 1750. 7. Four-shot English flintlock pistol made about 1750. 8. Two-shot English flintlock pistol with spring-bayonet attachment. 9. "North's Berlin" U. S. pistol made in 1813.

and was presumably manufactured about 1750. It has two separate hammers, two triggers, and two separate flash-pan covers. The two upper barrels are fired separately by pulling the respective triggers. When these are fired, to fire the lower barrels one turns the lever shown at the center of the pistol, which brings two fresh primings in contact with the sparks from the flints, and thus communicates the



ANTIQUE RIFLES.

1. Spanish snap-hammer blunderbuss made about 1700. 2. First breech-loader ever made in the U. S. 3. Spanish double-barrel flintlock gun made about 1700. 4. German rifled wheel-lock arquebus made about 1620. 5. The most perfect form of English blunderbuss. A folding bayonet is carried on top of the barrel.

flame to the two lower barrels through an orifice which is opened by the turning of the lever.

The arm can be fired quickly. All that is necessary after the first two shots are fired is to reclose the flash-pan covers and to recock the hammers.

Fig. 8 shows a two-barrel, English flintlock pistol with spring bayonet attachment, made by Nock, the celebrated London gunsmith. The pistol works on the principle of that shown in Fig. 7, with the exception that it has two barrels and one hammer and flash-pan cover only.

Fig. 9 shows a United States flintlock pistol, caliber 70, made for the United States Government, by Simeon North, Berlin, Conn., about 1813. No pistol made for the Government in early days is so much sought for by collectors as this, known as "North's Berlin." On the lock plate, in the rear of the hammer, is stamped "S. North, Berlin, Con." Between the hammer and the pan is an eagle and under the eagle is stamped "U. States."

This particular model was only made one year, and but very few are known to be in existence.

Fig. 6 shows a two-barrel, revolving flintlock pistol made by Bauduin, a French gunsmith, about the middle of the eighteenth century. This arm may readily be called the precursor of the modern revolver. The top barrel being fired, one revolves the barrels by hand, and as soon as the hammer is recocked, the pistol is ready for the second shot.

Among some guns in the same gentleman's collection, photographs of a few of which we reproduce, is that figured 1, which is an example of the early Spanish snap-hammer blunderbuss, made about 1700. Fig. 5 illustrates an English blunderbuss, manufactured by Twigg, of London, and shows the blunderbuss in its most perfected form. The arm, besides being a firearm, carries a folding bayonet on top of the barrel. Similar arms were much used in England in the latter part of the eighteenth century, most of the guards of the old English mail coaches carrying them in a special compartment at the rear of the coach. Fig. 2 shows John H. Hall's patent breech-loading flintlock rifle. This arm is the first breech-loading weapon ever patented in the United States, and was patented by William Thornton and John H. Hall, May 21, 1811. In 1815 Mr. Hall first brought to the notice of the Government the advisability of making all parts of a gun interchangeable with any other gun of the same model. In 1819 John H. Hall contracted with the United States Government to manufacture a certain number of these breech-loading flintlock rifles. The gun can well be described as the first successful breech-loading military arm, and also the first gun ever built on the interchangeable plan. Fig. 3 shows a Spanish double-barrel flintlock gun of the beginning of the eighteenth century. While a few double-barreled guns were made some time prior to this in Italy by some Italian gunsmiths, the Spanish craftsmen were the first to forge a light, strong and accurate-shooting double-barrel. In later years the double-barrel flintlock gun was brought to its high state of perfection through the efforts of Joseph Manton and a number of other English gunsmiths. No. 4 illustrates a German rifled wheel-lock arquebus, made about 1620. It is believed that guns were first rifled by Gaspard Zollner, of Leipsic, about 1498; others say by Augustus Kotter, of Nuremberg, about 1500. In 1631 William Landgraf, of Hesse, had several companies armed with rifled carbines.

The earliest authority we have for rifling in England is an English patent dated 1635.

The same gentleman has a number of United States flintlock muskets dating from 1799, when the first musket was made for the United States Government, to 1842, when the last of the flintlocks were made.

Altogether, the collection, although small, gives evidence of having been carefully and tastefully selected.



GEN. MISHCHENKO.

WHEN MISHCHENKO LED HIS COSSACK HOST.*

(Special Correspondence of the Herald.)

NEAR YINKOW, January 14.—The advance of Mishchenko's three columns was the best thing from the spectacular point of view which I have seen during the present war, and was at the same time one of the most daring and successful enterprises which the Russians have so far essayed.

On December 26th, the day after the Russian Christmas, or January 8th, with us, General Mishchenko, the Blücher of the Russians in the present war, crossed the Hun River, near Sudyatun, at the head of twelve regiments, that is, seventy-two squadrons of cavalry, with the object of destroying nine million rubles' worth of stores which the Japanese had accumulated at Yinkow for the use of their army and which they had only left three hundred men to guard.

The Russians have, of course, agents in Yinkow, who made them

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acquainted with these facts, and the expedition of Colonel Plaoutine, of which I have already written an account for the *Herald*, as well as various expeditions of other detachments of Mishchenko's command —one of which, carried out by the Tersko-Kubansky Regiment, a force of Caucasian volunteers, went as far south as the Taitsze River —disclosed the fact that with the exception of a few small and isolated Japanese posts, at Shalin, east of Liao-Yang, at old Niu-Chwang and in one or two other places the road from Mukden to Yinkow, along the eastern bank of the Liao-Ho, was practically open. Mishchenko would not, of course, refrain from destroying any force of Japanese or Hunghuzes or from burning any of the enemy's transports that he came across, but his main object was Yinkow.

Naturally this was kept secret, and in spite of all that has been said about the excellent, not to say miraculous, manner in which their Chinese agents serve them the Japanese do not seem to have suspected until the last moment that our raid was anything more than one of the usual small Cossack forays against the Hunghuzes. The cutting of the railway between Liao-Yang and Yinkow in order to prevent the despatch of troops southward was a necessary part of Mishchenko's plan.

COMPOSITION OF THE FORCE.

Mishchenko had with him, in addition to his twelve regiments of dragoons and cavalry, twenty-two cannon, that is, almost four batteries. Two of these batteries fired melinite, the rest shrapnel. All of them were, of course, horse batteries, six horses pulling each gun. There were, besides, four Maxims with the Degistan regiment, but these useful battle guns were never, I think, used during the advance southward.

We marched in three columns. The right column, which consisted of the Primovsky, Nervinsky and Chernigovsky Dragoons and the Frontier Guards, was commanded by General Samsonoff, and until the main force reached the Taitz it traversed the west bank of the Liao.

The central column consisted of the Zaibaikal Cossacks, that is of the Verkhnyudinsky and Chitinsky regiments, and of the Ural Cossacks. It was commanded by General Abramoff, the leader of the Ural Cossacks, and General Mishchenko accompanied it.

The left column consisted of the Don Cossacks and of the Caucasian brigade. It was under the command of General Tyeleschoff and was followed by the Zaibaikal battery, the soldiers of which bear in front of their black busbies a metallic scroll commemorating their bravery during the Boxer troubles.

Besides there was the mounted infantry, a fine body of men who should alone have carried Yinkow station on January 12th. As is pretty well known, each Russian regiment of foot has attached to it some hundred or so of cavalry. As under present conditions at the front, these horsemen are unnecessary they were all drafted for the time being into Mishchenko's detachment, which therefore amounted in all to some 7500 men. From this force different parties were from time to time detached for the purpose of cutting the railway, but of this hereafter. The four Maxims went with the Degistan regiment of the Caucasian brigade, but it was not the Caucasians who were supposed to work these guns. Trained men had been brought from St. Petersburg for that purpose. They were under

the command of Captain Chaplin, a promising young officer who had served in the artillery at Warsaw, but who was unfortunately the first man to fall on the occasion of this expedition.

A PICTURESQUE SIGHT.

I do not think that the present war has exhibited anything more picturesque than this southward march of the Russian cavalry. The mixture of races and costumes alone was something extraordinary. Among the Don Cossacks were Kalmucks and Tartars; all the Caucasians with the exception of the officers were Mohammedans, and among the Trans-Baikal Cossacks were many Kirghiz and Buriats. In that huge force of horsemen Buddhists, Mohammedans, Catholics and Lutherans all marched side by side in peace, and all prayed to God in their various fashions.

In my eyes, at least, the Caucasians redeemed their inefficiency by their picturesqueness. Outside of a theater I have never seen anything to compare with them. Their strong point was a row of cartridge pouches sewed to the coat, or rather, made of the same



MISHCHENKO'S COSSACKS.

piece of cloth as the coat itself and running obliquely down each side of the chest, after the manner shown in the photograph. Whatever use these pouches may have been put to in olden times, I have never but once seen them contain anything more dangerous than little ivory tubes made somewhat after the style of a cartridge, and generally used for containing snuff or tobacco.

The Caucasians all ride good horses from their own mountain—horses that are slender, graceful and handsome, like the typical Caucasian youth himself, and that seem able to travel almost any distance without tiring.

For some reason or other the same thing always happens when a Caucasian mounts his horse. One catches sight of him poised for a moment on one stirrup, while the horse rears and prances; then there is a flop of variegated petticoats, a jingle of spurs, a rattle of weapons, and the rider has tumbled into the saddle and is telling his still prancing steed in tones with more of admiration in them than of anger that it is naughty, very naughty.

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As the scouts in front and rear and on the flanks were regularly relieved there was no chance whatever for a strange horseman to accompany us without being observed. It would go hard, I am afraid, with any Japanese scout or enterprising but unauthorized war correspondent who attempted to get a view of us, even a long distance view, for without doubt he would have been immediately "spotted."

It must be admitted that the country was not the very best for horsemen, the land being all cultivated with the usual terrible thoroughness of the Chinese agriculturist and traversed by interminable little ridges which are bad enough for horses in any case, but which are rendered worse by the countless millions of sharp kiaoliang stalks with which they are covered.

On the first night after crossing the Hun River we halted at Si-fontai, and next day we faced south and continued marching south until we reached Yinkow.

On the very day on which we reached Si-fontai our scouts reported a conflagration in a village toward the southeast, but I should have concluded that it had no significance and was probably an accidental fire, had it not been for what happened next evening.

On the second day we reached a village called Yowdyeze, near the confluence of the Hun and the Liao Rivers, and it was here that we came for the first time into contact with the Japanese. Toward evening our foremost scouts overtook a small party of the enemy who were convoying a transport train consisting of twenty Chinese carts filled with hay and kiaoliang.

The main body of our column—that is, the right column—had no sooner reached these carts than we noticed an enormous cloud of black smoke rise from an adjoining village and hang suspended in the still air, a warning to all the Japanese for miles around. I had been previously disposed to scoff when I heard the Russians declare that every flash of light or column of smoke which they saw in the distance was a "signal," but there could be no doubt about the nature of this conflagration, for an officer of the Tersko-Kubansky regiment who entered the village found that the burning house was surrounded by empty tins of kerosene which had evidently been poured over the building.

When night came on we could see fire after fire being kindled in the east, one further away than the other, the remotest probably burning within easy distance of Yentai. They were certainly signals, and as I gazed on them from a hillock I could not help recalling some appropriate lines in Macaulay's poem on the Armada, and at the same time thinking how much inferior, after all, is the vivid imagery of the most warlike poetry to the bald truth of the real thing.

On the morning of December 28th (O. S.) we got ready before dawn—although, of course, there was not much to get ready, for we travelled as lightly as possible and our horses were always kept saddled—and assembled to hear the order of the day in a vast, sandy valley, one of these bits of gobi that break out like a rash on the smooth face of the plowed land.

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It was clear to us all this day that something big was afoot. The signals of the night before had probably prepared the men for something, and you could not fail to notice that they were prepared

by the vigilant glances they threw around them and the care with which they scouted. I happened to be riding on this occasion with the advance guard, not because I wanted to see the first shot fired, but because I had mistakenly supposed, when it started, that it was the main body.

As our strong, fresh horses bounded beneath us over the illimitable plain I began for the first time to understand the delight which the soldier takes in war. I had not been able to understand it previously, having been mostly occupied during battle in mournfully sitting on a bare hillside calculating by what time the Japanese batteries would get the range of us, and scribbling memos in my notebook regarding the disposal of my horse and camera. That sort of warfare drives fear into the marrow of one's bones, but on horseback, his lungs filled with ozone and his eyes bright with health, I think that even the coward gets an infusion of courage sufficient to make him laugh in the teeth of death or at all events to bear himself like a man until the ordeal is past.

As a pastime pursued for its own sake war—of the kind which old Mishchenko gives you—leaves fox-hunting far behind. In both cases you have the hard riding and the open air and the glorious sweep of country, but in war you have the piquant spice of danger, and even if you are a non-combatant the intoxicating sense of power, without which a ride across country will ever afterward seem to you like salad without vinegar, like an egg without salt.

When on the day after the fight at Yinkow I left my orderly, my Caucasian friends and Mishchenko in order to ride into a part of the country that had not yet been visited by the war, I felt like Brigadier Gerard after Waterloo. I was no longer anybody. Plump chickens walked right in front of me without the slightest system of alarm, and men hurried past me on the street just as if I had not come straight from a battle-field. I felt sad and depressed and determined to get "back to the army again" as speedily as possible.

Nearly every Cossack engagement opens in the same way. A Cossack scout rushes back breathlessly to his leader, and somehow or other, there is never any mistaking the news he brings. On two occasions, at all events, when I marked the agitation of the courier and the fleetness with which he rode, and noticed our leader bend forward in his saddle in an attitude of keen expectation, I said to myself, "Something serious has happened," and on both occasions I was right—a man had been shot. One of these occasions was the present, but when the man reached Colonel de Bunting and saluted he gasped and remained silent. It was not that he was wounded or breathless. The reason of his silence was that he was a Caucasian and unable to speak a word of Russian.

At the same time the first rifle cracked and Staff-Captain Chaplin fell from his horse, shot through the heart. He was a promising young officer who had been in the artillery at Warsaw, and had at the time of his death control of the four machine guns of the Degistan Regiment.

An interpreter having been found, Colonel de Bunting succeeded in ascertaining from the Caucasian scout that there was a band of Hunghuzes in the vicinity of a village called Lee-Quee-Shou. He therefore gave the order to charge, and the Tersko-Kubansky and the Donsky Cossacks received at the same time a similar command. The Hunghuzes were on the opposite bank of the Hun River—we were not far now from the point where the Hun joined the Liao—

and had apparently fired at us from behind one of the earthen mounds which the Chinese have constructed for scores of miles along the bank of the river in order to protect their fields from inundations. The Cossacks, therefore, crossed the ice and swept like a whirlwind on the Hunghuzes. The memory of that charge will make me feel proud the longest day I live.

The horses swept across the plain at a speed which one could scarcely have believed possible, considering the nature of the ground, and amid the clouds of dust raised by their horses' hoofs the swords of the Cossacks flashed. The Hunghuzes scattered so rapidly that I could form no idea of their number, but some officers put it at five hundred. Many of them stood their ground bravely, firing on the Russians until their heads were cloven by the Caucasians.

There can be no doubt that this band of mercenaries was in the service of the Japanese, for there were Japanese among them, and moreover, we captured from them a Japanese flag bearing a Chinese inscription meaning "the right camp of the left wing"—a "camp" in the Chinese Army consisting of five hundred soldiers. They were all hardy, well-formed men in the prime of life, and they rode good Chinese horses, but did not carry any swords or lances. Their Japanese instructors evidently took great pains to drill them, and on this occasion they were a credit to their instructors.

DEATH OF A FRENCH OFFICER.

Somewhat further south, our central column got into a far stiffer fight. Near the confluence of the Hun with the Liao there is a small walled village called Shou-to-ze, and in this village several hundred Japanese infantrymen held out with characteristic obstinacy for all the rest of this afternoon, thus delaying us by half a day and incidentally saving Yinkow.

The Verkhnyudinsky Cossacks were ordered to dismount and advance against them, and they did so with great courage, their officers riding in front. The first report we got was that the Verkhnyudinsky Cossacks were driven back and two of their officers wounded, one of these wounded officers being afterward carried inside the village by the Japanese. But next morning we saw the leathern coated men from Verkhnyudinsky advancing with the rest of us, and heard that they had taken the village on the previous evening, all the Japanese being killed or dispersed. Unfortunately, two brave young officers of the Verkhnyudinsky lost their lives on this occasion, one Nekrasoff, a sotnik or centurion of great bravery, who had previously been wounded twice during the present war, and the other, Ferdinand Bertin, a French officer.

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Lieutenant Bertin was buried before dawn next morning, January 11th, and the same day we crossed the Taitze and advanced on old Niu-Chwang. Not all of us went that way, however. The Primorsky Dragoons cantered off toward Ta-Shih-Chiao in order to blow up some of the railway and thus prevent the Japanese from bringing troops into Yinkow by rail. To hear these officers talking lightly of riding over to Haicheng, Ta-Shih-Chiao and Inkow made one almost inclined to imagine that we were back in January, 1904, and that the fall of Port Arthur and the defeats at Ta-Shih-Chiao, Liao-Yang and on the Shako were merely dreams. I, for one, was inclined to rub

my eyes when I saw again, in the distance, the familiar hills of Ta-Shih-Chiao.

On the previous day a mixed detachment, composed of half a sotnia of the Chitinsky Cossacks, half a sontia of the Verkhnyudinsky Cossacks and half a sotnia of the Uralsky Cossacks, had been despatched eastward with a good supply of perokyline in order to cut the railway north of Haicheng. They accomplished this task with the greatest ease and expedition. When they reached the railway line there were only a few Japanese there and these retired without firing a shot, whereupon the Cossacks proceeded to look for a bridge underneath which they might plant their explosives. Unfortunately they could not find any bridge, so they had to content themselves with blowing up part of the line.

A detachment of the Tersko-Kubansky reported that it had destroyed five hundred meters of the line at another point, and at four o'clock next morning a tremendous explosion from the direction of Tah-Shih-Chiao led us to conclude that a bridge on the Tah-Shih-Chiao-Yinkow line had been exploded. But this could not have been the case, for just before our attack on Yinkow two trains came through, probably from the south, for the line had certainly been seriously damaged in the vicinity of Haicheng—so much so that a train is said to have been wrecked there, and help could not, therefore, have come from that quarter.

At old Niu-Chwang we had another tussle with the Japanese. Fifty of them occupied a house there, and as we could not afford to waste time taking it we contented ourselves with making prisoners of two or three wounded officers—who, by the way, spoke Russian very well—and then pushing further north.

At old Niu-Chwang there was the usual litter of Japanese telegraph and telephone poles and wires and more than the usual capture of transports.

In fact, too much time was spent, I think, in burning these transports, which included clothing, kerosene, provisions and ammunition. Hundreds of cattle and sheep were also taken and driven before us. Every Cossack had a small bag of flour at his saddle bow and the Japanese must have found the tracking of him to closely resemble a paper-chase, for his route was marked by empty boxes of "Peacock" and other brands of cigarettes which the Japanese soldier loves.

On the night of the 11th there were no less than two huge fires reddening the horizon. They were Japanese transports on fire. We spent that night at the village of Hundyatun, twenty miles from Yinkow, and in the morning we set out with the determination of reaching our destination before sunset. We passed on our way still another flaming transport.

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THE ATTACK ON YINKOW.

The country became richer as we approached nearer to Yinkow, the villages far more prosperous and the land even better cultivated.

I was under the impression that we were still at a considerable distance from Yinkow, when at about 4 P.M., boom! went a gun on the right, and a little cloud of shrapnel burst over a village which was situated, as I afterward discovered, a short distance in front of the Yinkow Railway station. Boom! boom! boom! went other guns,

and then came the dense rattle of a heavy musketry fire, and we knew that the fight had begun.

Early on the morning of this day a Chinaman whom we met at Hundyatun had told us that there were only three hundred Japanese soldiers at the Yinkow Railway station and that there were no soldiers at all in the town. Our leaders had then been of the opinion that a party of Cossacks would be sent to smash up the Japanese administration buildings while the rest of us were burning the stores at the station, but just before the fight began General Mishchenko communicated to his officers his plan of action, which was as follows:

The Japanese, who were found to be strongly intrenched in front of the station, would be shelled and then attacked by a mixed force composed of detachments from the Tersko,Kubansky and other regiments, amounting in all to about one thousand men. If this attack were successful the Japanese stores would be set on fire, and then the Russians would fall back as fast as they could. Fearing that indiscriminate looting and subsequent complicaticns with foreign powers would take place if the Cossacks entered the town, the general forbade them to enter in any case.

Just as we approached Yinkow a train filled with soldiers rushed in from Ta-Shih-Chiao. It was made up of sixteen trucks, and calculating that each truck could accommodate forty men, it must have brought the strength of the garrison up to about a thousand; that is, it made them equal in strength to the attacking party, which had, therefore, of course, no chance, especially as the Cossacks were without bayonets and had no skill, anyhow, in attacking intrenched infantry. It is a truism to say that cavalry can do nothing against an equal force of infantry calmly lying behind earthworks, with their eyes on the sights of their rifles. Our Cossacks dismounted, of course, and advanced to the attack, sword in hand, but they suffered seriously from the Japanese fire and could make no progress.

Meanwhile the bulk of Mistchenko's force was held in reserve. I was with the Caucasian brigade on the left flank, that is, on the railway, where for some reason or other it was suspected that an attempt would be made to flank us. These suspicions were increased by the fact that a few shots were fired on this part of our line, but these shots were probably fired by isolated Japanese volunteers, or perhaps by our own scouts, who mistook one another for the enemy. Luckily, however, no harm was done—only two horses wounded, I think. But the fear of an enemy who was not there kept us close to the railway line until five o'clock, when the fight ceased.

THE ORDER TO RETREAT.

About half-past four a Chinese building in front of the station and another on the railway line burst simultaneously into flames, and many of us thought that the former building was the station itself, or, at least, some of the buildings in which the Japanese stores were kept. But the murderous fire of the enemy still continued and it was easy to see that we were making no progress. Just then an imperative order from General Mishchenko reached us. It was to the effect that we must at once retreat as quickly as we could to a village seventeen versts north of Yinkow, and we lost no time in doing so. There was not the slightest panic or disorder in our retreat, and I do not think that there was the slightest panic or disorder in any of the other detachments.

The general had evidently given himself an hour to do the work he had got to do at Yinkow, and had decided beforehand to leave directly that hour was up.

It was too dangerous to remain, especially with such a force as he had, made up of Kalmuks from the Don, Bariats from Trans-Baikal, and Mohammedans from the Caucasus—many of whom did not speak a word of Russian. If a night attack had been carried out these different parties might very probably have come into collision, under the impression that the other party was the enemy.

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With the stores at Yinkow station left uncaptured, the success of the raid was incomplete. But the Cossacks feel proud that they have been able to penetrate so far south practically without loss. They will never be any great success at attacking infantry in intrenched positions, but that is not what they were made for—their business being to blow up railways, destroy transports, reconnoiter, scout, cut off detached parties and show a clean pair of heels when they find themselves confronted by infantry.

We heard next morning that 20,000 Japanese had assembled at Haicheng and were going to cut us off by establishing a network of infantry posts from that city right across to the Liao River, but neither the information nor the more startling news that a Japanese infantry force was advancing toward us from the east of Yinkow caused us to hurry in the least.

By eleven in the morning we still occupied that village, or rather, the surrounding country, for the village was just large enough to contain General Mishchenko's staff and no more, and were looking after our wounded and making preparations for our journey north. Before noon, however, the Caucasian advanced to the southeast covering the artillery, which had been ordered to shell the approaching infantry.

The infantry did not approach, however, so that in the afternoon Mishchenko marched due north with great rapidity, as if he intended to retreat the way he come. The Japanese probably expected that and had made every preparation to give him a warm reception as he crossed the Taitsze and Hun Rivers. But just when it seemed certain that he was heading direct for the trap that had been prepared for him the wily old Russian leader swung suddenly to the left and was on the west bank of the Liao before the Japanese could properly realize what had happened. Next morning the enemy had also crossed to the other side of the Taitsze, but Mishchenko made it hot for them from eight o'clock to nine with his artillery. Then he moved on until he reached the main Russian army.

FRANCIS MCCULLACH.



Comment and Criticism.

"Our New Infantry Drill Regulations."

Major James A. Irons, General Staff, U. S. A.

In the article thus headed in your March-April number, the statement is made "that a little too much expedition was used," "that the result will be a host of requests for interpretation of certain paragraphs not clearly understood."

Possibly there may have been a little haste, but it must be borne in mind that there was a real necessity for expedition as the '91 Drill Regulations had been exhausted and there were many requests from the organized militia for copies of drill regulations.

There also will be hosts of requests for interpretations, but they will come principally from those who have not thoroughly mastered the details of the regulations. The present drill regulations are based principally upon the regulations of '91.

The changes are simple ones, and by comparison with, and knowledge of, the original work, it is not clearly understood why any misinterpretation should take place. Interpretations have grown to be a fad, which is encouraged by certain persons for their own financial benefit. Many of these so-called interpretations interpret wrongly, are not official, and should be avoided. For instance, referring to salutes, the following interpretation was published: A non-commissioned officer in charge of a detail would command "eyes right," men and himself at "right shoulder," he rendering the prescribed salute to *all officers* whom he met at saluting distance. By

referring to the first subparagraph 589, it will be seen that the sergeant would command "eyes right" if he met another armed body, the commanding officer, or the commanding officer's superiors; fifth subparagraph means "eyes right" is omitted, when the sergeant salutes an officer, not the commanding officer or the commanding officer's superior.

It is not understood why the permission given to instructors to go wherever their presence is necessary is conducive to lazy and indifferent drilling. In paragraphs 25 and 93, Schools of the Soldier and Squad, the instructors are placed under the supervision of an officer. In the company drill the lieutenants are under the supervision of the captain, and as the major is responsible for the instruction of his battalion (par. 246), he should supervise the company drill; likewise the colonel or lieutenant-colonel should supervise the majors when the latter are instructing their battalions. If this system of supervision is carried out thoroughly, there is no excuse for the same mistakes being repeated to the end and never corrected; and the perfunctory instructor should not be allowed to take his ease.

Paragraph 50 is same as paragraph 130, drill regulations '91. As there was no interpretation apparently needed for thirteen years, no change was made.

Paragraph 13 is a general principle applicable throughout the book and refers to men disarmed, as well as to those who are armed. When disarmed, there is no necessity for mentioning the execution of order arms; when armed, paragraph 54, 10th controls, and there should be no doubt in the mind of anyone.

One of the greatest aids to discipline is the manual of arms, as it, very early in the career of the recruit, requires from him the strictest attention to perform properly the different motions.

Why paragraphs 116 and 117 should have given such great surprise is not understood, when it is considered that the "turn" was the only method taught to a recruit in changing the direction of a squad line. By a reference to the regulations of '91, it will be seen that the "time-honored wheel" is not described to the recruit until he has taken his position in the company, it was probably the first movement he was ordered to execute, he had never heard of it, and previously had never been instructed in its details. Again, if a "turn" is a better movement than the "wheel" for a company or platoon, why not for a squad, especially as you eliminate the "wheel" which should otherwise have been taught in the school of the squad, at the proper time. There were other reasons for the change. The radical change of having a fixed distance between ranks, whether in line or column, which was approved by all who reported on the subject, is, to some extent, the cause for the abolishment of the wheel. With this distance it became necessary to discover some method of moving

the rear rank into position while the front rank was making the turn or wheel. The direct method of moving the rear rank into place was adopted instead of the indirect one of closing to facing distance and then falling back to proper position. This direct movement of the rear rank could be performed, whether the front rank wheeled or turned; with this condition, the wheel was not necessary and the time saved can better be devoted to other instruction. The file on the marching flank of the rear rank is compelled to take at least one step more than the file on the marching flank of the front rank; to enable the rear rank to gain its proper position and to move forward with the front rank, it became necessary to introduce the command "Full Step", which should be given immediately after the command "Squads Right, March", so that the second command of execution "March" can be given exactly at the same time the two ranks are in their proper positions and at the prescribed distance of forty inches. As a general rule, officers allow too much time between these commands when forming column of squads, and men are kept marking time when they should be moving forward or be at a halt. The same fault occurs when forming column of companies from column of squads.

One great advantage of marking time in forming line from column of squads is found in the great amount of time saved by not having to dress, in fact, some officers under the '91 Drill Regulations, for the purpose of securing a better alinement, were in the habit of instructing the men on the marching flanks to mark time, until halted or the command for the guide was given.

In paragraph 116 attention is particularly invited to the fact that the pivot "marks time" while *turning* (not *facing*)to the right, while in paragraph 117, the pivot "*faces* in marching" as explained in paragraph 36.

The necessity for the subdivision of a company into sections is distinctly stated in paragraph 319.

With the new rifle, loading is practically from the magazine, for the reason that the cartridges are to be issued by the Ordnance Department in clips of five, which makes the new rifle a magazine loader and practically takes from it the function of a single loader.

The "fire at will" takes the place of the magazine fire. The piece being loaded from the magazine, the "fire at will" affords as rapid fire as can possibly be desired, and troops not being charged are given opportunity to assist any neighbors several hundred yards distant. On other occasions the "fire at will" allows a very strong and effective fire.

There is nothing in the new drill regulations which prohibits the fixing of bayonets at any time during an action, even at 1000 yards from the enemy. In case, however, the bayonets are not fixed at

time rapid fire is commanded, then it is compulsory that the bayonets be fixed. The drill regulations in no place direct that the command "Charge Bayonets" be given on the arrival of troops thirty yards from the enemy. The command "Charge" will probably be given by drill signal (36-charge) on the trumpet.

The single rank idea found expression from the fact that in the reports made by officers of the army on the '91 Drill Regulations, a large number advocated exactly what is set forth in the revision.

To form company in column of squads into line of squads with center or other squad remaining on the line of advance (par. 228) is not deemed a mistake, as it allows a line to be formed rapidly when a column of squads is about to leave a defile and it is desired to form a line covering both flanks of such defile. For this purpose it is deemed superior to any other method given.

The method spoken of as having been used in the Philippines is simply the practical application of the movements presented in the text, and there would be much confusion and more interpretation if the text attempted to authorize particular, or to give all the practical, methods of applying the movements in the text.

In the evolutions of the regiment, an attempt was made wherever possible to frame the commands of the colonel so as to allow the use of trumpet signals as much as possible, since there are very few officers who have sufficient voice to make themselves heard by a full regiment in line. By using an orderly or trumpet signal, there is very little necessity for giving commands orally. In mass formations, oral commands can be readily heard and understood.

When using a trumpet there is no necessity for giving the drill signal "Battalions" as the signal "Halt" will suffice, especially as it indicates to the majors the movement to be executed and the commands of the latter determine the execution by the men in ranks. (Par. 351.)

The trumpet signal "To the Rear, March" is apt to be better understood by the major than the trumpet signal "Squads Right (left) About, March." To secure uniformity when this signal "To the Rear" is given, the squads always turn to the right about and never to the left about. If absolutely necessary to turn to the left about, there could be no objection to using the signal "Squads Left About, March."

By observing third sentence, paragraph 351, and remembering that the signals and commands are for the majors, the colonel, by first indicating the base battalion, enables each major to carry out the previous rules. For instance, if the signal were "Forward, March" "Guide Right," the major of the base battalion would probably have to give the commands "Forward, March" "Guide Center", instead of "Forward, Guide Center, March." In other words, where the drill

signals could be used the commands were fixed with respect to the use of the trumpet rather than to the employment of the voice.

The difficulties found in paragraphs 376 and 383 do not exist. By referring to paragraph 376 and applying plate 62 (par 315) instead of plate 66 (which refers to the movement *from line*), it will be seen that being in column of squads to form "Column of masses to the right" and to form "Line of masses to the right", that the rear companies in both cases incline to the left, and when formed they (in both cases) face to the original right. It is thus seen that there is no inconsistency and there cannot possibly be any controversy about these movements except when they have not been carefully studied. The "column of masses" and the "line of masses" are not formed directly from line. The line is first formed in "column of squads."

The word "echelon" is used exactly in the same sense as it was in the previous regulations. As its meaning and use are distinctly laid down in the definitions, the object of the criticism is not understood.

The regulations for tent pitching, perhaps, may not be considered the best by everybody, but they possess the feature of uniformity which was formerly sadly lacking, as often in the same regiment no two companies had the same method. This variation was very perplexing to the National Guardsmen when associated with the Regular Army.

Some complaints are heard about the omission of the movement "Right Forward, Fours Right," especially from officers who in street parades were compelled to suddenly reduce the front of a command and were practically prevented by the crowds, etc., from executing paragraph 183. The crowd was an obstacle and paragraph 277 might have been applied by cautioning the right (left) squad to move to the front, and then giving command "Squads Right (left), March," etc.

St. Louis, Missouri,
March 31, 1905.

"Military Hygiene."

Colonel John Van R. Hoff, Assistant Surgeon-General.*

Mirabile dictu a line officer has written convincingly on the necessity for the theoretical teaching to line officers of the "care of troops," for so Parkes defines Military Hygiene. Captain Traub's prize essay is a lucid exposition of how the teaching of military hygiene may be introduced into our military schools, and especially at West Point, of which justly renowned institution he has an intimate knowledge gained from the standpoints of cadet and instructor, and

*Instructor, Dept. of Sanitation, Infantry and Cavalry School, Fort Leavenworth, Kas.

his conclusions demand the thoughtful consideration of every lover of his kind and country. Before entering upon a discussion of the points made by Captain Traub, it might be well to glance at the history, and consider a definition of military hygiene.

That military men should know these would seem to go without saying, yet I venture to say that to many officers the very meaning of the term military hygiene is unknown, and for this the Military Academy is directly responsible, because this Institution has thus far determined the scope of military education in our country.

It is not to be doubted that the "care of troops" as an art, must have received consideration from thoughtful officers from the earliest days, but so far as known a systematic study of the principles of military hygiene has but recently become a recognized part of a military education. Parkes' great work, first published scarcely half a century ago, and almost contemporaneously the works of Roth and Lex in Germany, Morache, Boudin, Michael Livy and others in France, and Hammond with us gave an impetus to scientific investigation into means of preserving the health of soldiers which, as shown by statistics, has produced remarkable results. These works were the direct outcome of the war in the Crimea, where Lavaran states "the allies lost 52,000 men in six months, of which number 50,000 were unharmed by the Russians."

Military hygiene, the art of preserving the soldiers' health, treats of the principles which should govern in the selection and development of the recruit; the personal care of the soldier, his ration, the water he should drink, his clothing, the air he breathes, his various habitations, their interior economy, heating, lighting, scavengering, etc., his life in campaign, and finally the prevention of infectious diseases to which he is subject.

Certainly no one can deny that a deep knowledge of the foregoing subjects is a considerable asset in any officer, and should cut a large figure in determining his value to the country.

While a knowledge of military hygiene is important to every military officer, no matter what his office or grade, it is vital to three classes: 1st. To general officers, for they must be able to weigh the sanitary against the purely military requirements, and give to each its due value.

2d. To line officers, for it goes without saying that the care of troops is an essential part of their business, and this care, if efficiently administered, demands an adequate knowledge of the principles and practice of military hygiene. The line officer is the sanitary executive.

3d. To medical officers, whose most important function is that of sanitary expert, but whose relation to military sanitary matters is purely advisory. The medical officer's education in the principles of hygiene should be all-embracing; he must know the causes of diseases

and their remedies. Such attainment demands a knowledge of the fundamental facts of physics, chemistry, anatomy, physiology, and bacteriology; he must have all the practical knowledge of the line officer beside all the theoretical knowledge which would fit him to advise the line officer should the latter encounter sanitary problems the solution of which demands deeper sanitary knowledge than he possesses. In a word, the medical officer is the sanitary specialist and the line officer the general practitioner.

Having briefly stated what military hgyiene is, and whom it chiefly concerns, I will now consider the essayist's recommendations as to the enforcement of its study in our military schools.

What Captain Traub writes as to the entire practicability of giving military hygiene a definite status at the Military Academy, seems to an outsider to be absolutely unanswerable. Nothing that I can say would strengthen his argument, and it needs no strengthening, but if it did, it would find it in Professor Tillman's words: "During the first three years of the academic course at the Academy, the two departments first named (mathematics and philosophy) occupy the cadets on an average of four and a half hours daily for 607 days out of a possible 660 academic work days. While only a fraction of this time and labor is for purely disciplinary purposes, the total time is so great that it may well be asked if for a large number of cadets the disciplinary fraction of this labor could not be better devoted to other purposes." (JOURNAL MILITARY SERVICE INSTITUTION, Vol. XXXV, page 8.)

While the course in hygiene at the Naval Academy seems to have a graded standing—and counts for graduation—its value and influence have been largely determined by the enthusiasm of the instructor, who as surgeon of the command has many other and more arduous duties to perform. Of the course at the Naval Academy, Surgeon Beyer, U. S. N., says: "So far as teaching hygiene and physiology is concerned at Annapolis, it is true I was, perhaps, the first to start that chair with the intention of making it a sort of undergraduate course in hygiene, based on such experimental knowledge of physiology as we could teach the cadets. The point is right here—while attempts have been made, and have been continued ever since I left the Academy in 1896 to carry out this course, there is no law requiring this instruction. It is optional, and it is apt to change with every new change of superintendent. It is not uniform, it is not continuous, it is not fixed. The subjects taught are more or less optional with the professor; he is at liberty to teach what he likes. The subjects are not sufficiently fixed; there is a looseness, a laxness about the chair which makes me place very little faith in it now. Some legislation is necessary so that when a new superintendent comes he will not be able to make these changes. At

present we have no means of stopping him. He might annihilate the whole chair, and it has partly been done." (Journal Association Military Surgeons, Vol. XV, page 379.)

The status of military hygiene in our two great intermediary military schools naturally provokes an inquiry as to causes, for it is hardly to be presumed that the importance of a theoretical knowledge of the care of troops is not appreciated by the academic authorities.

It has been said that the teaching of military hygiene is the function of a post-graduate institution and has no place in an intermediary school—whose function is "teaching, developing and character forming." But why could not military hygiene be used to this end in the place of purely disciplinary studies to which Professor Tillman states so much time is given? Surely the cadet should be taught his drill and personal care (hygiene) at the same time, and he is. He learns the former theoretically from the book and practically on the drill ground as well—but the latter comes to him through custom and a code of regulations, the reasons for which he does not know—though these reasons constitute the sum and substance of military hygiene.

Again others, who do not recognize "the care of troops" in its more pretentious title, military hygiene, are theoretically content to relegate the whole subject to the medical department, until it comes to concrete cases—when they will do as they please and we will shoulder the blame. Still others are beset with the inertia of custom and can see no reason for teaching anything that has not heretofore been taught. Finally, most of those who are graduates of these fine institutions are apparently disinclined to have any one on the academic boards who is not an alumnus.

While undoubtedly military hygiene owes its present scientific form to army medical officers, and it is quite natural that they should be looked upon as the exponents and teachers of this science—surely there must be some among our hundreds of line officers sufficiently interested in the "care of troops" to study it as a science as well as practice it as an art. Certainly if some of our line officers have found time and inclination to make themselves lawyers, engineers, mechanicians, electricians—*id genus omne*—at least a few others with taste in that direction, which our essayist evidently has, might specialize as military sanitarians and, by their example and writings impress their fellows of the line as he has done, with the fact that a knowledge of the scientific care of troops is an essential part of an officer's education.

The inclusion of military hygiene in the curriculum of the garrison schools in the general scheme of education promulgated in G. O. 115, series 1904, W.D., it is believed was done at the suggestion of the writer, approved by the staff of the General Service and Staff College.

But the recommendation was not accepted in its entirety—for it contemplated adequate instruction in this important subject beginning with the first year of the garrison school and continuing in the service schools, through the Staff College.

It is gratifying to observe that this is what our essayist recommends, and even more, for he demands the recognition of military hygine by the War College as well. What he says regarding the inadequacy of the present course needs no comment.

The very complimentary remarks by Captain Traub on the course in military hygiene in the Infantry and Cavalry School, which course the writer has the honor to conduct, are consolatory, but not wholly deserved. That the course is not all it should be, we flatter ourselves, is not the fault of the Academic Board, but is due to the fact that thus far military hygiene having been taught in no other school for line officers,we had to begin at the very foundation of the subject. In a word, we are forced to give a high school rather than a university course. The scope of the course is best illustrated in the subjoined examination problems which I insert at the risk of excluding more valuable matter:

I.—You are detailed to examine and muster into the United States service a regiment of volunteers; your medical assistants are from civil life, and unfamiliar with the regulations governing the physical requirements of a recruit. You happen to be without a copy of the recruiting regulations, but must begin out work at once.

Write out a brief summary of requirements of a recruit; instructions to govern the examiners, covering the method of examinations, age, physical proportions, the principal causes for rejection, and what the examiner must record.

II.—As a member of a uniform board appointed to consider the whole question of military clothing, you are especially assigned to consider and report to the board upon the materials of which military clothing is made, their kind, color, advantages and disadvantages.

Write a memorandum covering what you would embody in such a report, giving reasons for your conclusions.

III.—A separate brigade recently recruited, of which you are acting chief commissary, has been cut off from its base of supplies, and must expect to live upon the country for some time. Cattle, sheep and hogs are obtainable, also corn, flour and potatoes. The brigade commander directs you to submit an estimate of the amounts and kinds of available food the command would require for the maintenance of health and efficiency. As a basis of this report, write out memoranda covering:

(a) Food classification.

(b) Nature and function of each class of food.

(c) Daily proportionate parts of each class of food required by the individual soldier.

(d) State what articles of food and the quantity of each per day you would recommend to cover these requirements.

(e) Also write down suggestions for the management of the ration so as to give variety and promote contentment.

(f) The ordinary method of selecting and cooking beef.
(g) The selection of flour and its baking.
Note: No tables need be given in the solution of this problem. The following data are available:

100 parts of	Water.	Albuminates.	Fat.	Starch.	Waste.
Beef	63	20	17		
Mutton	55	18	27		
Pork	56	17	24		
Corn	13	7		78	2
Flour	11	12		71	6
Potatoes	78	2		18	2

V.—With reference to the barracks mentioned in the previous question (IV), discuss the following subjects: ventilation; dangers to health from inadequate ventilation; disposal of products of respiration and combustion; air and floor space, fresh air required and how obtained.

VI.—In connection with the construction of a post, state what are the various ways of disposing of excrementitious and other waste matters, which you as quartermaster might have to consider, and give a description of each.

VII.—What consideration should govern you, as quartermaster, in providing a water supply for a post; sources, quantity, quality and probable contaminations being considered.

Describe some of the more dangerous contaminations, the simple methods of detecting impurities; and also some ways of purifying water.

VIII.—What would be your responsibilities as a company commander, regarding the personal sanitation of the men of your company? State what instructions you would give them in the matter of cleanliness, clothing, pack, habitation, bed, food, water, sinks, care of feet, habits and amusements.

I believe that anyone who reads the foregoing* will conclude that nothing was required in this examination that should not be known by all officers as the very foundation of their military education, and if such is not generally known, the opportunity to acquire this knowledge—and to practice the precepts flowing therefrom—should be given every officer, for without it he is by so much a handicap to the service.

Important as is a theoretical knowledge of the scientific care of soldiers to those of the organized forces, who learn their sanitation through daily precept, and usually practice it successfully, how much more important is such knowledge to our so-called "military resources," the civilian of to-day who may become a soldier to-morrow.

The average of our enrolled forces in all wars is 550,000, and it is not to be expected that in any future war we will require less. Of this number we would have in the Regular Army and navy about 150,000, most of whom would have learned military hygiene by rule of thumb. By what rule would the remaining 400,000 learn it? Under

*Questions IV, IX and X on this examination sheet are referred to in General Woodhull's paper *ante*, and are here omitted.

present circumstances by the same rule, and in the process of learning would be repeated the old, old story that each war has told of fever camps and needless sacrifice to preventable diseases.

If there were no other reasons for the theoretical study of military hygiene by the regular establishments than an example to our unorganized resources, which of course no intelligent man will concede, this would be enough, for certainly these will not take the trouble to study the care of troops unless we of the regular establishments set the example.

What Captain Traub says of the teaching of military hygiene in the civil schools throughout the country to which army officers are detailed as instructors, touches upon one of the most important features of the whole subject. It is the people who will do the fighting when fighting is to be done, and if they are to learn the soldier business they must learn it theoretically, for we are a nation in arms only when the war is on, and the recruit, trained at the desk, the counter, the anvil, or the plough can have no knowledge of right military living unless he learns it *theoretically*.

Military hygiene should be taught in every civil school for boys; medical colleges should take it up, and it should be made a compulsory study in all public schools.

The essayist makes a strong appeal to the women of our country, God bless them! to help to disseminate a knowledge of military hygiene among their husbands, brothers and sons. If they will do this during peace times, then will their hearts not be wrung in war times by the needless sacrifice of dear ones to the Moloch of preventable diseases.

Captain Traub's suggestions as to the promotion of the intelligent practice of military hygiene in our service are interesting and worthy of comment, but I fear I have more than exhausted my share of space, and will close this *critique* by congratulating the essayist upon his valuable and timely paper.

FORT LEAVENWORTH, KANSAS,
February, 1905.



Reviews and Exchanges.

Military Government and Martial Law.*

THE author, in his original work, written after careful consideration and study of the laws, precedents and decisions relating thereto, classifies "Military Jurisdiction"—outside of military law—into "Military Government" and "Martial Law"; the former as including all that pertains to the military administration of affairs in conquered territory of a foreign enemy, or in territory within the State occupied by subjects in a state of rebellion and recognized as belligerents; and the latter as prescribing the forms of military administration, and laws governing it, in domestic territory where, for the time, the civil authority has been overthrown through resistance to law and the prevalence of disturbance and disorder beyond its power to quell. He puts military government within the domain of International Law and the laws of war, while designating martial law as within the cognizance of municipal law.

He thus gives a distinct place to each, with a more definite meaning to the term "martial law," which has heretofore frequently been used as a general term, sometimes as synonymous with military government and sometimes even with military law.

Taking the decision of the Supreme Court in the celebrated Milligan case as one of the greatest importance, he apparently finds the opinion of the minority upon the subject of martial law most in accord with his own. He believes that while martial law is in force civil courts may exist alongside military tribunals, protected by the military force or martial law, but nevertheless under martial law because they exist only by its protection; that martial law exists not as a constitutional authorization, but as a necessity to the existence of national life; for if the civil authority is overthrown and unable to enforce the edicts of the Constitution and the laws made under it, and there is no other power to maintain it, anarchy would result and all government would cease.

He illustrates his views by cases such as that in which General Scott established (what was in reality) martial law in the city of Bal-

**Military Government and Martial Law.* By W. E. Birkhimer, LL. B., Major, General Staff, U. S. A. Second edition. Kansas City and London: Franklin Hudson Pub. Co., 1904.

timore, in June, 1861, where the civil courts were in undisturbed operation, and continued so, but under the authority of martial law; and he justifies the situation by the fact that while there was no open rebellion, the civil officials were actually in active sympathy with the rebels, and there existed in the then condition of the municipal government a danger as formidable to the National Government as was presented by the enemy's army in the field.

Likewise in Kentucky, during the Civil War, martial law was justified by the fact that the civil authorities of the State, including the judiciary, could not or would not, frustrate the treasonable designs of the enemy. These are not only examples of martial law declared while civil courts are in operation, but also come under the minority opinion of the court as cases of "justifying and excusing peril" which justified the President in his declaration of martial law.

He maintains that the whole subject of martial law, when instituted by Federal authority, must be determined in all its details by the President and his subordinates; that the troops are present to compel obedience to the supreme law of the land; that there must be confidence in these officials and in their integrity; and if that confidence is misplaced or the authority misused, there is a remedy in the power of impeachment, and in the responsibility of subordinates before the civil courts.

The author is well qualified to consider these questions from the fact that he is not only a lawyer, but a soldier of experience, endowed by character and education with a clear method of thought and positive opinions which he expresses in distinct and precise language, and from the military point of view. There can be no mistaking his meaning, and he gives his reasons and the authorities justifying his conclusions.

His exposition of the history of military government and the development of the war tribunal—the military commission—and also of the events requiring the establishment of martial law in domestic territory, and of the questions which have arisen under each, with the authorities to which he makes reference, is especially valuable to the student of martial law, military government and the laws of war.

As the present Judge-Advocate General of the Army has said: "The original work is the most complete treatise on the subject in the English language, and embodies the views which prevail in Anglo-Saxon countries on the subject of martial law and military occupation."

The real value of the work, and its true place in our system of military jurisprudence, was fully established during the period of military occupation which succeeded the Spanish-American War, and by the results of events which have happened in domestic territory since 1892, the date of its first publication.

To those officers of the army who had to do with matters of administration of civil affairs under military government, or with the subject of military tribunals in occupied territory under the laws of war, it was a most valuable book of reference and authority for the conduct of affairs which were most perplexing; and it was especially appeciated by the American army commander endowed with the powers, duties and responsibilities of military government, in situations often unusual, unexpected and without precedent in our history.

In the course of the events following the Spanish-American War,

and in the domestic troubles which have arisen since the first publication of this work, there have developed new questions, and there have been new decisions of the courts rendered, affecting the status of the army and the duties and responsibilities of its officers under those conditions, largeiy sustaining military authority and upholding the views maintained by the author.

It would be impossible, in any short space, to enter into the special conditions existing in Cuba, where there was a military government, pure and simple, administering civil affairs through the medium of the form of a civil government under military authority, in Porto Rico and in the Philippines, where the military government was continually compelled by insurrections and uprisings to maintain its authority by force of arms; or to do more than refer to those events occurring in domestic territory, such as the Chicago affair of 1894, and the position taken by Attorney-General Olney and President Cleveland therein—the later troubles in Colorado where recently the courts sustained the power and authority of the governor in the use of troops to suppress disorder, etc.

All these have been considered in the revision of his orginal work. This work will be found interesting not only as a book for reference and use in questions of military government and martial law, but also for its historic value in its treatment of events occurring during the service of our armies in Mexico, in Cuba, and in our insular possessions.

No army officer expecting to serve in those possessions, or hoping to be well equipped in the knowledge of the laws of military occupation, the laws of war, and the administration of affairs by military government, or in the execution of martial law in domestic territory, can afford to dispense with possession of this book.

March 15, 1905. EDGAR S. DUDLEY.

Forty Years of Active Service.*

THE most recent contribution to the literature of the Civil War is to be found in the first twenty chapters of Col. O'Ferrall's book. The title is somewhat misleading to the military reader, whose conception of the term "active service" is specific, while but a minor portion of the author's reminiscences, measured by years, demands mention in this publication. In the pages under consideration, those who may happen to be familiar with the events described will find "a round unvarnished tale," delivered in terms of soldierly frankness, and considering the point of view of the writer, in admirable temper, on the whole. The narrative derives interest and value in that the narrator has, for the most part, abstained from the consideration of matters lying outside of his ken, confining himself to the relation of those in which he was a participant—*quorum mogra pars fuit*—digressing only in so far as has been rendered necessary for the preservation of the context and continuity of the story.

There is much to interest the Confederate reader in the recalling of several figures of prominence in the earlier stages of the great conflict, but whose images have become obscured by time, or have dwindled in perspective as compared with later comers upon the scene—"so runs the world away." We had almost forgotten Ashby—the *preux chevalier* of the young Confederacy when Stuart

**Forty Years of Active Service.* By Charles T. O'Ferrall. New York and Washington, The Neale Pub. Co. 1904.

and Hampton and the Lees had still to win their spurs—but he lives again in Colonel O'Ferrall's story, and prances before us on his milk-white charger. Of interest, too, is the list of officers who attained high rank while still easily within the age limit recently prescribed by Dr. Osler, averaging between 31 and 32 years.

Colonel O'Ferrall adds another leaf to the record of the first great mounted combat of the Civil War which, perhaps, deserves quotation —known alike as Beverly Ford or Brandy Station.

* * * * *

As soon as our brigade could rest and recruit its horses in the clover and blue-grass fields of Augusta, it joined the cavalry corps under Stuart, in the Piedmont section, and we had plenty to do, and had many skirmishes, leading up to the sanguinary field of Brandy Station on June 9, 1863. This was, perhaps, the most famous almost strictly cavalry engagement of the war. It was cavalry against cavalry—a carbine, pistol and sabre combat, with only a little artillery firing in the early morning, and an occasional cannon roar during the day.

On the day before, our cavalry corps had been reviewed by General Lee, the day was ideal and the ground as suitable as could have been desired. The appearance of General Lee as he rode in review with General Stuart, with Stuart's black plume waving like the white plume of Henry of Navarre, aroused the enthusiasm of the corps to the highest pitch, and prepared them for the bloody struggle of the next day, though we had no idea that it was to occur; yet at that time we were ready for anything, not knowing when we lay down at night what the breaking of the next morning's dawn would bring.

General Stuart had adopted a system of having a regiment from each brigade on what was termed "grand guard" while lying in camp; that is, the horses were kept saddled and bridled, and the men by them, day and night, so that the regiment could move at a moment's notice in case of an emergency.

On the evening of the review, June 8, my regiment, the Twelfth, under Colonel Harman, its colonel, went on grand guard, and we all lay down that night by our saddles and bridled horses, with our boots on and sabres and pistols buckled around us, and our carbines by our sides, with nothing to do in case we were called up but to strap our blankets on our saddles, mount our horses and fall in line.

On the ninth, before the sun had risen high enough to reflect its rays upon our camp, the sound of a cannon was heard in our front, in the direction of Beverly's Ford on the Rappahannock. Instantly our regimental bugle sounded the call to mount; the men sprang out of their blankets, and I am sure in less than ten minutes the regiment was in line awaiting orders. A fellow in the line remarked that such an early rising was not good for a man's liver, but we would knock the livers out of the disturbers of our rest as soon as we could get at them. We did not have to wait long for our orders. They came to us by a courier, from General Jones, mounted on a fleet-footed thoroughbred, and they were to quickly move to the front, which meant to Beverly's Ford. The enemy's cavalry had crossed the Rappahannock during the preceding night and were advancing. Colonel Harman led his regiment in a trot and gallop until he discovered the enemy's cavalry in a piece of woods beyond an open and clear field three or four hundred yards in front. He ordered me to deploy my squadron, the First, Company B. (Lieutenant Rouss commanding) and Company I, my company, and advance upon the woods, telling me he would support me with the remaining four squadrons of the regiment. I obeyed his command and moved my skirmish line over the open space. The enemy made no demonstration until my line was almost within the edge of the woods, when they let drive a galling fire, checking my advance, killing and wounding several of my men and horses. At the same time they rushed upon us as thick as angry bees from a hive when stirred. But Colonel Harman was up with the other four squadrons of the Twelfth, and the fight became close, fast and furious; but being in far greater numbers they drove us back to a hill in the field, where reinforcements came to us, and we drove

them back to the cover of the woods. Several times was this repeated. We would drive them into the woods and then they would rally and drive us to the hill. For hours this seesawing was kept up. Finally, after we had driven them the fourth or fifth time to their rallying point, they showed no disposition to charge again, and we fell back to the hill. As may well be imagined these various charges and counter-charges were not without heavy cost to both sides, and no decided advantage, so far as we could see, had been gained by either. Lieutenant Randolph was severely wounded—a fearless officer. We held our line on the hill for some time—how long, I could hardly approximate—I think, however, as late in the evening as three or four o'clock.

While we were fighting—and, in fact, while we were sitting on our horses on the hill, waiting—fighting was going on to the right and left of us. But the enemy had disappeared from our front. Suddenly we were ordered to the rear, and the speed at which our colonel was leading us satisfied me that we were badly needed somewhere, but where I did not know nor have the slightest conception. When we had gone some distance we saw a Confederate officer sitting on his horse by a piece of artillery on elevated ground, waving us on; we quickened our already rapid pace and soon reached him. I was riding at the head of my squadron, the First, which was the head of the regiment, with the colonel. The officer pointed out to us two regiments of cavalry drawn up in columns of squadrons, evidently waiting for us; they had no doubt seen us approaching from some point, as the country was entirely open and unobstructed. Forming squadron front we charged; the Federal cavalry also charged. The two forces met; sabres flashed, crossed and clashed, pistols rang. In a few minutes White's battalion, led by its dauntless and intrepid commander, Col. E. V. White—who is still living, an honored and esteemed citizen of Leesburg, came with a rush, and the result was the Federal force sullenly withdrew, leaving us in charge of the field.

It was a drawn battle—neither had a victory, neither could claim any decided advantage. Both sides had won trophies for gallantry and courage; each had proved itself worthy of the other's steel.

* * * * *

In a work whose scope and purpose is reminiscent rather than judicial, it is, perhaps, hypercritical to expect absolute statistical accuracy, and some of the author's figures have been the subject of cavil. The relative numbers in the opposing ranks in the Civil War will probably, in view of the absence of definite Confederate returns, always constitute a moot question. There is not space within the compass of this notice to go into the arguments in the case. Colonel O'Ferrall is too valiant a Confederate, perhaps, to take strict account of the Tybalts who "fight by the book of arithmetic." In this connection, an utterance of General Lee may be worthy of note: "We shall never be able to make the world believe the odds against which we have fought."

The narrative is enlivened, though not enriched, by the importation of some remarkable "Joe Millers" in the way of anecdote, which could have been spared. We have come to look for the yarn of the fugacious "cottontail," which, in one guise or another, is served up in almost every book of war experiences—albeit it never gets beyond the initial clause of Mrs. Glass' oft-quoted recipe.

A. C. R.

The Story of the Congo.*

SETTING forth in a complete manner under convenient subheads the writer of this book has given to the American public an account of the organization and methods of the forces used by King Leopold in his efforts to civilize the Congo Basin.

The steps which lead to the equitably ruled Free State as it is to-day were, first, the International Geographical Conference held in Brussels in 1876, then the International Association for the exploration and civilization of Central Africa, the direct result of that conference, and then the Congo Free State as recognized by the Conference of Berlin in 1885. These are described in detail and are of great value to a student of this subject, but to a military man the most interesting portion of the work is, perhaps, the record of Belgian exploration in the early days, the description of the methods used to repress the Arab slave raiders and the story of the organization of the native army.

Mr. Wack's book also sets forth the unselfish motives that led King Leopold into the enormous task of civilizing his colony of 1,000,000 square miles inhabited by 20,000,000 people, and the book contains a description of the wonderful improvements that have been made in the lives of the natives, aided by the State system of medical supervision, the careful administration of justice, the establishment of missions, schools, railways, roads and postal telegraph and telephone services.

The author's arguments, used to convince the reader that every action of the Belgians was open and above-board, are well written and he substantiates the points made by abundant documentary evidence; but although it is plain that the writer is entirely disinterested and that the writing of the book was a self-imposed task, still one may have his interest so awakened by the statements made by Mr. Wack that, as there is another side to the story from an American, British or German standpoint, one may feel that a further study of the subject might well show that there are grounds for believing that King Leopold did not act wholly with the sublime honesty of purpose that Mr. Wack would have the reader believe.

The charges made that the Belgians with their newly-organized force of cannibal soldiers have treated the natives with great cruelty reminds one of the baseless stories which were circulated about the action of our forces in the Philippines a short time ago, and Mr. Wack amply refutes such allegation.

To a soldier who may be called upon to serve in some uncivilized country, this book is of great value and interest.

W. H. J.

Tactics for Beginners.†

THIS excellent treatise, the outcome of the author's work as instructor in tactics at the British Military Academy (for infantry and cavalry), has reached its third edition within five years after its original appearance, a sufficient indication of its value to the British Army.

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*_The Story of the Congo Free State._ Social, Political and Economic Aspects of the Belgium System of Government in Central Africa. By Henry Wellington Wack, F. R. G. S. (Member of the New York Bar). With 125 illustrations and maps. New York. G. P. Putnam's Sons. $3.50.

†_Tactics for Beginners._ Major C. M. DeGruyther, p. s. c., Late Instructor in Tactics at the Royal Military College, Camberley. Third edition. London: Gale & Polden, Ltd., 1904.

The method of treatment of the subject is simple, but also accurate and thorough, so that it is not only suitable as a text-book for cadets, but also constitutes a useful manual for study and reference for officers of all grades. Moreover, having been carefully brought up to date, the work has practically displaced the older treatises on the subject, and having been adopted as the text-book at the Royal Military College, it has naturally been taken up by the army at large.

The contents of this work are similar in character to those of most of the text-books on the subject. After a brief chapter on organization, and some clear notes on the relations of time and space, the author discusses the important subject of outposts in a thorough and very practical way, without too much detail, yet presenting all the important and essential elements.

The subjects of marches, advance and rear-guards, reports and reconnaissance are all treated in a satisfactory manner. What impresses the reader or student particularly in these chapters is the *system* of arrangement and treatment, the *subdivision* of the chapters into distinct sections, and the *summaries* of principles or important points to be brought out, all of which tend to increase the value of the manual both for study and for reference.

One of the most useful and interesting chapters (and one which is an entirely new addition, appearing for the first time in this edition) relates to the evolution of tactics since 1866, and brings the subject-matter down to include the early part of the war now in progress in the Far East. The tactics employed in the various campaigns referred to are clearly described, and the lessons to be learned from each are fully enumerated and intelligently set forth.

Besides the chapter on the present tactics of the three arms, separate and combined, there are special chapters on night operations (which appear to play so important a part in the Russo-Japanese War), savage warfare and convoys, as well as the attack and defense of villages, woods, rivers and defiles.

The diagrams are comparatively few and simple, but clear and adequate.

The volume is well printed in large, clear type on heavy paper, and neatly and substantially bound.

The work, as a whole, is a reliable text-book on the subject, and can be read with profit by all officers.

J. P. W.

The Lincoln Cavalry.*

THIS volume describes in detail the varied experiences of the first volunteer cavalry organization of the War of the Rebellion. The way it came into existence is interesting, and suggests similar experiences thirty-seven years later.

From a meeting held April 19, 1861, began the efforts of Ezra H. Bailey (later Major), who, acting with Col. Carl Schurz (the first officer authorized by the Secretary of War to raise such a regiment) and Maj. Phil Kearney, secured Andrew T. McReynolds as colonel. With a company recruited in Philadelphia, one in Syracuse, and one at Grand Rapids, Michigan, the main part of the regiment was re-

**The First New York (Lincoln) Cavalry.* By W. H. Beach, A. M., First Lieut. and Adjutant. Published by "Lincoln Cavalry Association," New York. 1902.

cruited in New York and put under canvas at Elm Park, Eightieth Street, New York, that summer. The German companies did not fraternize very well with the other companies and the regiment was divided between two camps.

The Philadelphia company was sent to Washington, July 22d, and on August 18th made a reconnaissance, and meeting some Confederates near Mt. Vernon, the captain charged the enemy, who after firing one volley fled. This is claimed to be the first charge of Union Volunteer Cavalry.

A week later the nine companies in New York, after public ceremonies and a proud march down Broadway, embarked at Cortlandt Street, reaching Washington on the 27th, and by September 10th the last of the twelve companies reported. January 1st the President commissioned the colonel. The other officers were commissioned by the governors of the States from which they came.

The first officer who fell was Lieut. Henry B. Hidden, who bravely led a dash with seventeen men at Sangster's Station, March 9, 1862. April 19th the regiment embarked for the Peninsula; it was divided up among corps commanders, and participated in the campaign, but apparently, as the record shows, in no way to create among them a very high regard for General McClellan. The casualties were twenty-six (four fatalities) to this point.

That fall they did duty in Maryland and the mountains of West Virginia and Virginia; casualties forty, fatalities to the end of the year, three.

In 1863 the events in which parts of the regiment participated number seventy-eight, the principal being Winchester, June 14th and 15th, when two officers and fifty-three men were lost, as missing, out of a casualty list of sixty-three. Corporal Rihl is said to have been the first Union soldier who fell on Pennsylvania soil; he was killed June 22d, about five miles above the Maryland border, near Shippensburg.

The events of 1864 number nearly one hundred, and the casualties principally at Newmarket, in May, were about 250, chiefly in the column of missing.

The book will be mainly interesting to the participants and their, descendants. Fragmentary duty of the detachments makes the record of slight value in the way of elucidating any of the campaigns. The opportunities for personal bravery and indefatigable toil which came to the cavalrymen, as this regiment was used, apparently gave it a wide and favorable reputation.

The book is embellished with many photographs of the officers and men, but has no index.

C. E. L.

Effects of Tropical Light on White Men.*

IN "Effects of Tropical Light on White Men," by Major Charles E. Woodruff, Medical Corps, U. S. Army, the author presents a volume which, filled as it is with technique and scientific deduction, fills a heretofore wide gap in our knowledge of cause and effect regarding human adaptability to conditions and bodily ills, and presents much matter of interest not only to the medical profession, but to the anthropologist, the ethnologist, the statesman and historian, and

**Effects of Tropical Light on White Men.* By Major C. E. Woodruff, A.M., M.D., Surgeon U. S. A. New York and London, Rebman Co. 1905.

withal is not too technical to be of absorbing interest to the layman, especially to all persons who for any reason may be obliged to reside in the tropics, as the following quotations indicate:

"Man's intelligence permits him to appreciate the dangers of a climate and avoid most of them by proper protection, so that he survives longer than other forms out of their zones, even as long as two generations in the case of white men in India, but here, with all his care, a third generation is unknown."

"Teutons in the tropics may have a temperature of 100 deg. or even 102 deg. without infection, and as this temperature destroys nerve tissue it is only a question of time when exhaustion and collapse occur."

"The sunstroke may come on from twelve to twenty-four hours after the exposure, and in the milder degrees of exposure it may be months before the paretic symptoms are noticeable—even after return to temperate climates."

Major Woodruff deals some heavy blows to generally accepted dictums when, for instance, he says:

"We moderns of the intelligent classes alone violate the mother's instinct to hide away in the dark with her baby, and we ruthlessly thrust it out into the sun's rays—actually strapping the poor little sufferers into their carriages and torturing them with the direct rays of the sun pouring down into their faces. Every now and then a physician has to call attention to the damage done to babies' eyes by this senseless practice," and

"It seems proved that, for the older men at least, the exhausted organism cannot nourish itself properly and that a little alcohol is needed to aid digestion and supply extra absorbable, digested and easily burned fuel and thus relieve the natural processes of part of their burden."

But to the layman the final chapter "Rules for White Men in the Tropics" is the portion of the book of greatest value, as it gives the directions of one thoroughly competent in the premises, which, if adhered to, the author believes, will produce the best results.

H. O. S. H.

Lectures on the War.*

A LITTLE pamphlet of forty-two pages gives an excellent account of the war up to the middle of August. The author gives an interesting account of the events leading up to the war, from the Asiatic point of view, and in the last chapter in summing up the campaign says: "The unqualified command of the sea on the side of Japan, and the impending fall of Port Arthur only a matter of days, and the destruction or dispersion of Kuropatkin's armies in sight, we may say that the first campaign is ended, so far as military lessons are concerned."

This was before the battles of Liao-Yang and Sha-ho.

The criticism of the battles is interesting.

The account of the Battle of the Yalu explains the success of the Japanese on rational grounds. He estimates the numbers engaged as 40,000 Russians and 50,000 Japanese.

The turning movement is explained and the attack on the center and left of the Russian position is put in a clearer light than in the ordinary accounts of the battle. "The Russians opened a heavy fire from their trenches some 800 yards distant. Seeing the difficulties of further continuing the advance in this direction, Nishi

*A Series of Five Lectures on the Russo-Japanese War. By Lieut. Col. H. D. Robson 2d Bat., The Queen's Regiment. Gales & Polden, Aldershot. 1904.

cleverly withdrew his men to the cover of the river bank and changing his direction, etc." This is quite different from the account in the newspapers of the frontal attack at the point of the bayonet.

In the account of the Battle of Kinchau the author appears to be misled by his topographical sketch.

He says: "It is doubtful whether any troops in the world could have done what the Japanese did on this occasion."

When, however, it is considered that the Russians were subjected to a fire in front, flank and rear, and had been partially driven out of their works before the Japanese approached, it does not appear necessary to make such a distinction in their favor in comparison with white soldiers.

W. R. L.

The Opening of Tibet.*

THIS sumptuous royal octavo of 484 well-printed pages and fifty-two admirable illustrations contains an entertaining and exhaustive account of the very successful mission sent out two years ago by the British Government to Tibet. Previous attempts to reach Lhassa, its capital, have for centuries been attended with as much danger and difficulty as the efforts of Franklin, Kane, Greeley and Peary, to discover the North Pole. Colonel Younghusband, the British commissioner, and General MacDonald, the commander of the military escort, were honored with a fascinating task, which was conducted with skill, good judgment and moderation. The commissioner states: "That throughout the expedition we felt that our national honor was at stake, and down to the latest joined Sepoy, we bent ourselves to uphold and raise higher the dignity of our Sovereign and the good name of our country; to show that not even the rigors of a Tibetan winter, nor the obstinacy and procrastination of the two most stolid nations in the world, could deter us from our purpose; above all, to try and effect our purpose without resorting to force. If, as unfortunately proved to be the case, fighting were inevitable, we were determined still to show moderation in the hour of victory."

We can heartily commend the author of the volume as a most judicious and competent chronicler; full of enthusiasm for the wonderful scenery of the almost unknown land through which the mission forced its way, and successfully accomplished its purpose of opening the country to the outside world precisely as Perry opened Japan, in 1851. The numerous full-page illustrations can also be highly commended, and the frontispiece, representing "The Turquoise Bridge of Lhassa," is a fine example of a colored engraving. We regret to be compelled to conclude this brief notice of Mr. Landon's valuable volume with the expression of our surprise and regret, that a work of its high character should appear without an index. This omission, it may be expected, will be supplied in the second edition, which the author intimates will shortly appear with considerable additions.

JAMES GRANT WILSON.

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*_The Opening of Tibet:_ An account of Lhassa and the country and people of central Tibet and of the progress of the mission sent there by the British Government in the year 1903-04; written with the help of all the principal persons of the mission, by Perceval Landon, special correspondent of the _Times_. Introduction by Col. Francis E. Younghusband. (Price $3.80.) New York. Doubleday, Page & Co. 1905.

The Illini.*

IN "The Illini," published by A. C. McClurg & Co., of Chicago, Mr. Clark E. Carr, the author, presents an interesting volume in which a bundle of reminiscences and somber fact connected with the State of Illinois, from 1850 to the close of the Civil War, are cleverly bound together with a ribbon of romance so bright that it is always clearly discernible and serves to hold the reader's interest until, as the volume is closed, one is inclined to lisp "the end," that a single word may not escape.

The author is evidently a man of affairs, who has personally taken part in the making of his State and has known many of its public men, whose reputations, unrestricted by State lines, have become national or world wide. In reading the volume one seems to be in the presence of Lincoln, Grant, Logan, Yates, Douglas, Trumbull, Morrison, and a score of others, some of whom have gone to their rest, while the others are yet giving valuable service to the State and Country they helped to make. The reminiscent portion of "The Illini" deals particularly with the passions which swayed society at the close of the Civil War, of the political realignment they brought about, and of the position and parts in that great struggle played by the Illinois men; while in the romance portion, the foresight and wisdom given to the characters strongly suggest "The Vicar of Wakefield."

That a single volume, if well written and interesting, will make its author's reputation is evidenced by "The Illini," which it is pleasing to know that although the book did not appear until the frost of last December it has already gone through the first, second and third editions, and a fourth edition is about to be put upon the press.

The volume is well printed on excellent paper, and is illustrated with portraits of some of the noted Illinois men of the period to which it pertains.

H. O. S. H.

Famous Battles.†

THESE volumes contain descriptions of various conspicuous military and naval contests, beginning with "Nelson at Copenhagen" in April, 1801, by Herbert Russell, and ending with "The Ashantis Campaign in South Africa in 1874, under Sir Garnet Wolseley, by G. A. Henty. Among the writers whose descriptions are comprised are Col. W. W. Knollys; D. H. Parry; A. S. McKenzie, U. S. N.; H. M. Brackenbridge; Angus Evan Abbott; Archibald Forbes; Sir Walter Scott; Maj. Arthur Griffiths; Chas. Lowe and John Augustus O'Shea.

The accounts are not intended to be those solely of epoch-making events, but are also of desperate encounters. Thus Col. Forsyth's heroic defense of his party of fifty at the Arickaree Fork against the Sioux in 1868 is one of the tales of the volumes; Morgan's raid in 1863 into Kentucky and across the Ohio River into Indiana also forms another of the stories.

Austerlitz, Jena, the retreat from Moscow and Waterloo com-

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*_The Illini:_ A Story of the Prairies. By Clark E. Carr. Chicago. A. C. McClurg. 1904.

†_Famous Battles of the Nineteenth Century._ Edited by Chas. Welsh. 2 vols. New York. A. Wessels Co. 1903.

prise the Napoleonic battles of the century described. The exploits of Decatur, the fights between the *Constitution* and the *Guerrière*, and between the *Chesapeake* and *Shannon* are the only naval events recounted. It will therefore be seen that there is no pretense at completeness in the list of famous battles. The purpose of the compiler "To show what war is in reality, and thus perhaps to inculcate the desire to avoid it," has probably been only in part at least accomplished, for the recital of brave deeds, more likely stimulates than deters others.

C. E. L.

With Kuroki.*

THE author followed the first Japanese Army, under Kuroki, from Korea to Liao-Yang. He became so attached to his yellow companions that he speaks of "our infantry," etc.

This makes the picture more vivid, but the first chapters which were evidently written in haste for the benefit of Collier's Weekly do not prepare the reader for the excellent judgment displayed in the last chapters "Aftermath" and "Strategy and Politics of the War." If the military reader will begin with these chapters he will be interested in the author and his work and find it worth his while to wade through the earlier chapters for the sake of information that is scattered through them.

He may be sure, at least, that he will see what the author saw, and if already more or less familiar with the subject he will find that all these chapters throw much useful light upon it.

Describing the successful attacks of the Japanese, he says:

"How far the bad marksmanship of the Russians was responsible for these marvels, which still puzzle the foreign world, is one of the problems of war. I am yet unconvinced that against good shots and a vigilance as sharp as their own the Japanese could have succeeded."

W. R. L.

The Napoleon Myth.†

REMARKABLE as are the feats and contortions of a skilled acrobat one is often tempted to wonder if they are not surpassed by the mental gymnastics in which some writers occasionally indulge, and this little book tends to confirm one in the belief that the latter are the more astonishing. The key-note of the introduction by Dr. Carus is struck in the opening sentence in which he declares that

> "It is remarkable how much more of our historical traditions are saturated with mythology than we are commonly aware of, while, at the same time, legends, in spite of their fanciful dress, contain more of actual fact than, on superficial inspection, historical criticism seems to warrant."

"The Grand Erratum" is indeed a strange document, concocted by

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**With Kuroki in Manchuria.* By Frederick Palmer. Illustrated from photographs by Joseph Hare. New York, Charles Scribner's Sons.

†*The Napoleon Myth.* By Henry Ridgeley Evans. Containing a reprint of "The Grand Erratum," by Jean-Baptiste Pérès, and an introduction by Dr. Paul Carus. The Open Court Publishing Co., 1905. London agents, Kegan Paul, Trench, Trübner & Co., Ltd., 4 vo., 65 pp.

a certain Jean Baptiste Pérès, a professor of mathematics and librarian of Agen, a little town in southern France. Its aim was to parody the attempt of the erudite M. Dupuis to prove that all religions could be explained as solar myths, and the result was a most remarkable satire. By a decidedly far-fetched process of reasoning he deduces that the name Napoleon means "Veritable Apollo," being derived from the Greek verbs ἀπολλύω and ἀπολέω (to kill, destroy or exterminate), and the prefix νη or ναι which is a strong affirmative. Like Apollo, he was born in an island in the Mediterranean, and the analogies between the name of his mother, Letitia (Latin, Latona), and the sun-god's mother Λητω; between his four brothers and the four seasons; between his two wives and the earth and the moon, the wives of the sun; between the "Hydra of the Revolution" which Napoleon crushed and the python slain by Apollo; between the twelve marshals and the twelve signs of the zodiac; between Napoleon's Russian expedition and the course of the sun after the vernal equinox; and, lastly, between Napoleon's coming from Egypt and the east to rule over France until after Waterloo, when an English man-of-war carried him off over the western seas and the course of the sun, are traced with greatest ingenuity. Pérès sums up his argument by declaring that

> "It has then been proved that the supposed hero of our century is nothing more than an allegorical personage, deriving his attributes from the sun. It follows that Napoleon Bonaparte, of whom so much has been said and written, never existed; and this fallacy, into which so many people have fallen headlong, arises from the amusing blunder of mistaking the mythology of the nineteenth century for history."

Such processes of reasoning remind me strongly of the celebrated syllogism:

> Those who eat least are most hungry;
> But those who are most hungry eat most;
> Ergo—Those who eat least eat most.

In a very different vein is "The Mythical Napoleon. An Occult Study," by Henry Ridgeley Evans, which forms the principal part of the book. As its author truly says:

> "It has been the fate of the great historical personages—warriors, priests, poets, kings and reformers—to have woven about them a tissue of myths and fables. . . . It is, then, the duty of the student of history to dissipate these myths and fanciful stories, to treat men as real beings and not as demigods."

It is quite natural that there should have grown up a legend, a cult, even a fetish worship, around the most brilliant, the most meteoric, the most theatrical character in history, who held the center of the world's stage at a unique period and under circumstances which will probably never have their counterpart again. The great Colossus took infinite pains to mold the opinion of posterity just as he made France and all Europe submissive to his yoke, and if he was able to compel the admiration of even his enemies, it is scarcely surprising that he succeeded in hypnotizing such an impressionable people as the French so effectually that his influence over them will, in all probability, never be completely destroyed; like "Banquo's

ghost, it will not down." Titanic in his capacity for labor, Titanic in his conception and striving after universal dominion, Titanic in the forces which he exerted over others, through the medium of his superhuman will, Titanic in the struggles which his insatiable ambition called forth, almost every incident of his unexampled career abounds in dramatic elements which readily lent themselves to the halo with which his superhuman personality has naturally been invested. No other man in history has been so much written about, so much discussed, and no other general, no other sovereign has ever been the object of such devotion, such passionate worship as the little man of whom Châteaubriand declared that, even after he had died a lonely exile at St. Helena, the mere apparition of a manikin clothed in his great gray coat and the big cocked hat would suffice to set all Europe on fire and make every sovereign tremble for his throne.

As Evans truly says: "There is, then, a legendary Napoleon and a real Napoleon. The real Napoleon is gradually coming to light, and the mythical one is fading into the background. Modern historians are taking the middle ground." The reader who is in anywise interested in the legendary Napoleon can spend a most charming half-hour with Mr. Evans' delightful study, which is profusely illustrated by excellent reproductions of some of the pictures which, like Raffet's wonderful conceptions, have contributed so much to perpetuate the glory of the Napoleonic legend. The appendix contains a reprint of the extremely interesting article that appeared in the New York *Tribune* of October 30th, 1904, in which the Paris correspondent, C. Inman Barnard, tells the history of the cocked hat worn by Napoleon at Waterloo which the painter, Gérôme, bequeathed to the Institute of France. FREDERIC L. HUIDEKOPER.

An English-Spanish Manual.*

AN excellent little book in many ways, but requiring quite a little knowledge of Spanish on the part of the reader to enable him to use the book intelligently and advantageously.

This third edition, modified so as to be useful to civilians as well as to soldiers, is a distinct improvement on the first edition. A serious defect, however, still exists in the use of the written or graphic accent. No one system has been adhered to. Sometimes, as on page twelve, the final letters n, s, are treated as vowels for purposes of written accentuation, whereas more usually, they are treated as consonants. This is confusing, especially so to those who have merely an elementary knowledge of Spanish. It is now sixteen years since the Spanish Academy adopted the "new method" of accentuation, and a book like the present one under consideration should have been printed under that method.

The "English-Spanish Manual" should prove quite valuable to officers and to non-commissioned officers during their tour of duty in the Philippines. A number of ruled blank pages for notes, are inserted after each group of expressions and sentences.

P. E. T.

**English-Spanish Manual.* Third Edition. Revised by Maj. C. G. Morton Sixth U. S. Infantry. Kansas City. Hudson, Kimberly Pub. Co. 1904.

New Forces in Old China.*

THE above is the title of a well-written and carefully-considered volume by Arthur Judson Brown and published by the Fleming H. Revell Company. The author has divided his work into five parts. Part I, "Old China and Its People," gives just enough of the habits and customs of the Chinese and conditions in their country to convince the reader of the author's knowledge of his subject, both from observation and extensive reading. Parts II, III and IV are a discussion of the forces of foreign commerce, foreign politics and foreign religion now operating in the Empire, and Part V is devoted to speculation on the future results likely to proceed therefrom. The author seems to shy at the so-called "Yellow Peril," but justifies the Chinese if they should ever make it a reality.

"New Forces in Old China" adds an important and valuable volume to the literature of a field even somewhat overworked recently, and should be read by all who are interested in China or who desire facts to guide and govern them in speculation as to its future.

H. O. S. H.

Trials and Triumphs.†

THE volume with the above title, a product of the joint authorship of Capt. Hartwell Osborn and others, is as described in the subtitle, a "Record of the Fifty-fifth Ohio Volunteer Infantry" in the War of the Rebellion.

It is well written and goes into quite minute details of the operations in which the command was engaged, and is brightened with frequent anecdotes. It will be, undoubtedly, of great interest to all members of the organization and their families, and is so valuable as a minute history that it should find place in all historical collections aiming at completeness, and the reader cannot help wishing for willing hands to perform a like labor of love for all organizations. The work, which is profusely illustrated with portraits, maps and views, comes from the press of A. C. McClurg & Co., of Chicago, and has appended a list of the killed and wounded, a daily itinerary of the regiment's movements and a roster of its personnel.

H. O. S. H.

The Moscow Expedition.‡

THE brilliancy of Thiers' great work is universally recognized; but, on the other hand, every student of the Napoleonic era is fully aware that the "Bulletins of the Grand Army" do not attain more than approximate accuracy in chronicling the movements of the French armies, for the reason that they were not only compiled in haste from ofttimes meager information, but were issued for the manifest purpose of influencing the people not merely of France, but

*_New Forces in Old China_—An Unwelcome but Inevitable Awakening. By Arthur Judson Brown. New York, Chicago and Toronto: F. H. Revell Co. London and Edinburgh. 1904.

†_Trials and Triumphs_—The Record of the Fifty-fifth Ohio Volunteer Infantry. By Capt. Hartwell Osborn and others (with ninety-four portraits, views and maps). Chicago. A. C. McClurg & Co. 1904.

‡_The Moscow Expedition._ Extracted from Thiers' "Histoire du Consulat et de l'Empire," vol. XIV; edited, with introduction and explanatory notes, by Hereford B. George, M. A., Fellow of New College, Oxford, author of "Relations of Geography and History," "Napoleon's Invasion of Russia," etc. Oxford, the Clarendon Press, 1904. 1 vol., 312 pp.

of all Europe. Thiers' history, therefore, suffered inaccuracy, inasmuch as he follows closely the accounts given by the bulletins, and it may, perhaps, be due to his frequent disregard for historical exactness, coupled with his fertile imagination and lofty conception, his graphic style and artistic ability, and heightened by his partiality, arising from an almost slavish worship of his hero, that he was able to produce a narrative which is acknowledged a classic, notwithstanding its defects. Its tremendous length has, however, frightened away the average reader whose limited time and interest cause him to seek some shorter and more accurate history and thus to lose much that would well repay him.

With the possible exception of the narrative of Waterloo, there is no part of Thiers' work equaling his description of the fatal Russian campaign which, as Mr. George declares, "has a dramatic unity and completeness that has scarcely a parallel in history, and it is narrated by Thiers with a vividness which might well make less eventful history attractive." In this respect Mr. George has conferred a genuine benefit on the general reader by placing within his reach such a splendid account of the greatest, and at the same time the most disastrous, military expedition ever known. He has wisely omitted the part which deals with the preliminaries and the initial movements of the campaign, the interest in which must necessarily be confined to purely military students, and he has compressed all their essentials into a succinct introduction of ten pages, thus paving the way thoroughly for Thiers' own narrative, which opens with the eve of the "Battle of the Giants," fought at Borodino or the Moscowa, the last defensive position covering the "holy city" of Moscow. Mr. George has done much to assist the reader who is not fully conversant with the military history of the First Empire, by the insertion of a chronological table of the chief events of the campaign, a list of the original authorities, both French and Russian, an index of persons and a geographical index in which the diversified spelling of the various names is clearly shown for their better identification. Another valuable aid is to be found in the admirable maps covering every essential feature reproduced from those that appeared in 1899 in Mr. George's own book.

The impossibility of doing full justice to any great work by means of a translation, however well made, is too generally known to admit of any criticism, and this undeniable fact may have been the reason why Mr. George has preferred to reproduce Thiers' text in the original, leaving to those who demand a history entirely in English his own excellent account of "Napoleon's Invasion of Russia," and those of Sir Robert Wilson, Alison, Jomini (translated by General Halleck) or Yorck von Wartenburg as translated in the Wolseley Series. However, it would assuredly have been preferable had the entire work been harmonious, published either wholly French or wholly in English, and surely some better method might have been devised for pointing out the historical inaccuracies of Thiers than the explanatory notes which have been relegated to the end of the work like a child's school-book. However, these are only minor defects and in nowise diminish the credit due him for putting this prose epic of Thiers within the reach of the general reader.

FREDERIC L. HUIDEKOPER.

Letters from an Old Railway Official.*

FROM time to time there have appeared, in more or less attractive form, stories dealing with American railroad life; occasionally the subject is treated with some attempt at truthfulness in describing the scenes and incidents of the plot, but more often the author draws upon the imagination.

In "Letters from an Old Railway Official to His Son, a Division Superintendent," Maj. Charles De Lano Hine, has recited in a series of chapters or letters certain phases of the profession familiar to all who follow its many walks, and made interesting reading for those whose impressions of the practical operations of a great road are mainly derived from views through a car window. The book is divided into twenty-four letters and a postscript, by Frank H. Spearman. The author's intimate knowledge of the various departments, and the rare skill with which he touches upon their management, lends to the work more than ordinary value.

In his sketches of character, as encountered within the "right-of-way", he has shown a keen sense of observation, and his deductions in this respect are singularly free from bias. To the executive officer, as well as to the more humble section hand, there will be found much that is instructive in this too brief little volume.

J. F. R.

Received for Library and Review.

Register of the Society of Colonial Wars in the District of Columbia, 1904.

Report of the Commission Appointed by the President to Investigate the Conduct of the War Department in the War with Spain. (Washington) Government Printing Office, 1899.

Mines and Quarries, 1902. Special Reports Department of Commerce and Labor, Bureau of the Census. (Washington) Government Printing Office, 1905.

Prison Life of Jefferson Davis. By Bvt. Lieut.-Col. John J. Craven, M.D. A new edition, published by G. W. Dillingham Co. (New York,) 1905.

Biographical Sketch of James Bridger, Mountaineer, Trapper and Guide. By Maj.-Gen. Grenville M. Dodge. (New York.) 1905.

The War Between the Union and the Confederacy, and Its Lost Opportunities. By William C. Oakes, Colonel in the Confederate Army, etc. (New York and Washington.) The Neale Publishing Co., 1905.

Impressions of a Company Commander. By Le Capitaine Breveté Du Génie Patez. Translated from *Revue du Genie Militaire*, by Capt. J. R. Williams, Capt. F. R. Shunk and Lieut. E. M. Rhett, Corps of Engineers, U. S. A. (Washington.) 1905.

James Lawrence, Captain, United States Navy, Commander of the Chesapeake. By Albert Gleaves, Lieut.-Commander, U.S.N. (New York.) G. P. Putnam's Sons, 1904.

**Letters from an Old Railway Official to His Son, a Division Superintendent.* By Maj. Charles De Lano Hine. Chicago. The Railway Age. 1904.

A Military and Naval Dictionary, compiled by Maj. John P. Wisser U. S. A. and H. C. Gauss, Esq., of the Navy Department. (New York.) L. R. Hamersly Co., 1905.

The Use of Troops in Civil Disorder, From the Legal and Tactical Standpoint. A Lecture. By Col. Edward E. Britton, N. G. N. Y., 1904.

Transportation of Troops and Material. By Maj. Chauncey B. Baker, Q. M. Department, U. S. A. (Kansas City, Mo.) Franklin Hudson Publishing Co., 1905.

Handling the Straight Army Ration and Baking Bread. Prepared by Capt. L. R. Holbrook, Fifth Cavalry. (Kansas City, Mo.) Franklin Hudson Publishing Co., 1905.

Catechismal Edition, Infantry Drill Regulations, U. S. A. By Brig.-Gen. Wm. F. Spurgin, U. S. A. (Kansas City, Mo.) Franklin Hudson Publishing Co., 1904.

Soldier's Handbook of Target Practice. (Kansas City, Mo.) Franklin Hudson Publishing Co., 1904.

History of the Military Canteen. By Lieut.-Col. Philip Reade, Insp.-Gen., U. S. A., Major Fourth Infantry. (Chicago.) C. J. Burroughs, 1901.

Administration, Organization and Equipment Made Easy. By Maj. S. F. Banning, Second Battalion, Royal Munster Fusiliers. Fifth Edition. (London.) Gale & Polden, Ltd., 1905.

A Brief History of Works Erected for the Defense of Portland, Maine. By C. F. Porter. (Washington Barracks, D. C.) Press of the Engineer School, 1905.

A History of Battery "A" of St. Louis. With an Account of the Early Artillery Companies from Which It Is Descended. By Valentine Mott Porter. (St. Louis.) Missouri Historical Society, 1905.

Life and Services of William Farrar Smith, Major-General U. S. Vols. in the Civil War. By James Harrison Wilson, Major-General, U. S. V. (Wilmington, Del.) The John M. Rogers Press, 1904.

A History of the Twenty-second U. S. Infantry. Compiled from Official Records, by Maj. O. M. Smith, U. S. A., Capt. R. L. Hamilton, Adjutant Twenty-Second Infantry, and Capt. W. H. Wassell, Twenty-Second Infantry.

The Crisis of the Confederacy. By Cecil Battine, Captain Fifteenth The King's Hussars. (New York.) Longmans, Green, & Co., 1905.

Report of Test of Metals and Other Materials for Industrial Purposes, made with the U. S. Testing Machine at Watertown Arsenal, Mass. (Washington.) Government Printing Office, 1904.

The Yellow War. By "O." (New York.) McClure, Philips & Co., 1905.

The Medal of Honor. A Story of Peace and War. By General Charles King. (New York). The Hobart Company, 1905.

Port Arthur; Three Months with the Besiegers. By Frederic Villiers. (London and New York). Longmans, Green, & Co., 1905.

The History of the Victoria Cross. By P. H. Wilkins. (London.) A. Constable & Co., 1904. (New York.) E. P. Dutton & Co.

Editor's Bulletin.

WE take pleasure in acknowledging, on behalf of the Military Service Institution, the generous and graceful editorial tribute to its work and worth to the Army, which appeared in a recent number of the *Journal of the U. S. Cavalry Association.* It was apparently prompted by an examination of the General Index to the contents of our Journal—1880–1904.

Thanks to the Cavalry Journal.

The testimony thus borne by our younger contemporary to this evidence of "The professional culture existent among us to-day" cannot fail to stimulate the Army to continue to bring "the best thoughts of its most earnest officers before the whole service, and the needs of the service intelligently expressed before the public at large."

To this end we heartily echo the advice of our cavalry colleague as follows:

"*Every officer of the Army ought to be a member of the Military Service Institution.*"

The Santiago Prize.

The "Santiago Prize for 1904" has been awarded to Lieut. TOWNSEND WHELEN, Thirtieth U. S. Infantry, for a paper published in this journal (Nov., 1904) entitled "Scientific Coaching of the Rifleman."

The Hancock Prize, 1904-5.

Lieut.-Col. NATHAN S. JARVIS, N. G. N. Y. (Captain U. S. A. retired) has been awarded the Hancock Prize of $25 for a paper entitled, "Physical Preparedness and the Organized Militia."

Amend Rules Hancock Prize.

At a stated meeting of the Executive Council, April 12, 1905, it was "*Resolved* that the rules for the Hancock Prize, which fix the maximum limit at '12,000 words,' shall be and they are amended to read '6000 words.' To take effect July 5, 1905, except that papers published before that date shall have the benefit of the original maximum limit."

Short Paper Prizes.

At a recent meeting (April 12) of the Executive Council, it was decided to dispense, after July 1, 1905, with the 2d grade prizes ($25) for short papers, thereafter retaining only the provision for the $50 prizes.

Badge of the M. S. I.

The demand for the bow-knot badge of the Institution continues, attesting to its popularity. It may be obtained on application to the Secretary. The badge, complete, with gold monogram is 75 cents; ribbons may be renewed at 25 cents each.

Types and Traditions.

A number of favorable responses have been received to our invitation to contr bute reminiscences to the new historical series "Types and Traditions of the Old Army" for early publication in the JOURNAL.



The term "Old Army" relates to the men and events of the American Revolution, War of 1812, Mexican and Civil Wars, 1766-1866.

A complete *Register of Membership of the Institution* is in preparation and will be published during the coming fall.

Journal of the Military Service Institution 1878 — 1905

Governor's Island N. Y. H.

THE JOURNAL

JULY-AUGUST, 1905



SOME of the papers approved for early publication in this JOURNAL.

I. "MODERN ARMS, MODERN WARFARE AND GOVERNMENTS."—By John Brisben Walker, Esq., Editor Cosmopolitan Magazine.

II. "MUSINGS OF A SUPERANNUATED SOLDIER." (Being advance sheets from a forthcoming work). By the late Major James Chester, U. S. Artillery.

III. "AN AMERICAN UNIFORM FOR THE U. S. ARMY."—By Major Cassius E. Gillette, Corps of Engineers.

IV. "JUNGLE TACTICS."—By Lieut. Louis McL. Hamilton, 14th U. S. Infantry.

V. "THE PORTO RICO PROV. REGT. OF INFANTRY."—(Ill.) By S. Krausz, Esq.

VI. "ORGANIZATION, MAINTENANCE AND TRAINING OF FIELD-BATTERIES IN THE ORGANIZED MILITIA."—By Lieut. John F. O'Ryan, N. G. N. Y.

VII. "A SYSTEM OF SEARCH-LIGHT DEFENSE."—By Captain William D. Webber (late) M. V. M.

VIII. "A VISIT TO THE RUSSIAN TRAINING CAMP AT MOSCOW."—By Capt. D. W. C. Falls, Adjutant 7th Regt., N. G. N. Y.

IX. "TYPES AND TRADITIONS OF THE OLD ARMY." Extracts from the diary of Colonel Jeduthan Baldwin, Continental Engineers 1774-80 (Captain in French and Indian War).—Edited by Col. John H. Calef, U. S. A. "Memoir of Colonel Henry Burbeck," 1st U. S. Artillery 1802 (Captain Continental Artillery, Revolutionary Army), by Col. A. B. Gardiner, U. S. A. (Illustrated); also "Service at Fort Rice, D. T., 1866-67," by Gen. William M. Wherry, U. S. A.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

The Military Service Institution.

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Executive Council.

Term ending 1911.

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Colonel F. A. SMITH, Eighth Infantry.
Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Term ending 1909.

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Term ending 1907.

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(Vacancy.)

Publication Committee.

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MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.

Gold Medal—1905.

First Prize—Gold Medal, $100 and Life Membership.

Second Prize—Silver Medal, Honorable Mention and $50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with $100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and $50 to the first honorably mentioned essay. Should either prize be awarded more than once to the same person, then for each award after the first, a *Clasp* shall be awarded in place of the medal.

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1906.* The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize;* and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed ten thousand words, or twenty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than five thousand words.

II.—The Subject selected for the Prize Essay of 1905, is

THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT: THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED.

III.—The names of the gentlemen selected for the Board of 1905 are: General ROBERT S. OLIVER, Ass't Secretary of War.
Brigadier General JOHN W. CLOUS, U. S. Army.
Colonel JAMES REGAN, 9th U. S. Infantry.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

T. F. RODENBOUGH,
Secretary.



The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, the subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted for the year 1905 is:

HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED?

Competition is open to all Officers or ex-Officers of the Army, Navy, Marine Corps, Marine Hospital Service, Volunteers or National Guard.

Three copies of the Papers on the subject must be transmitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1905. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as provided for the Annual (Military Service Institution) Gold Medal Prize.

The names of the gentlemen selected for the Board of 1905 are:

Major General JOHN C. BATES, U. S. Army.
Brigadier General CAMILLO C. C. CARR, U. S. Army.
Brigadier General FREDERICK D. GRANT, U. S. Army.

T. F. RODENBOUGH,
Secretary.

GOVERNOR'S ISLAND, N. Y.,
Jan. 1, 1905.

Prizes for Short Papers.

Extraet from the Minutes of a Stated Meeting of the Exeeutive Counеil of the Military Serviee Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., Mareh 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows (also am. April 12, 1905):

Hancock (Infantry) Prize.

The Hancock Prize: $50, and Certificate of Award to be given for the best original essay or paper, the award to be made under existing regulations for the Gold Medal, exeepting that the paper shall eontain not less than 2,500 words nor more than 6,000 words,* and that but one eopy of such paper shall bc required from thc author; said essay to be eritical, descriptivc, or suggestive, on subjects directly affeeting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twclve months ending Mareh 1 of each year and which has not been contributcd in whole or in part to any other assoeiation, nor has appeared in print prior to its publication by the Institution, nor has been published in the JOURNAL in any previous year, and exeluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a eommittee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry offieers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of eaeh year.



Fry (General) Prize.



The Fry Prize: to be the same as the Hancock Prize and awarded upon the reeommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending Sept. 1 of eaeh year, on subjects directly affecting the military serviee and not otherwise provided for; with the announeement not later than November 1.

Buford (Cavalry) Prize.



The Buford Prize: to be similar to the Haneock Prize, and to be awarded on the recommendation of a board of whieh two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending May 1 of cach year, on subjccts direetly affecting the Cavalry or Mounted Serviee; with announeement not later than July 1.

Hunt (Artillery) Prize.



The Hunt Prize: to be similar to the Haneoek Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending July 1 of each year, on subjeets direetly affeeting the Artillery Serviee; with announeement not later than September 1.

*All papers eligible under these rules published prior to July 5, 1905, shall be entitled to maximum of 12,000 words. (Amended April 12, 1905.)



The Santiago Prize.

THE NATIONAL SOCIETY OF THE ARMY OF SANTIAGO DE CUBA has founded a prize to be known as the "Santiago Prize," by contributing, annually, the sum of

Fifty Dollars

" for the best original article upon matters tending to increase the efficiency of the individual soldier, the squad, company, troop, or battery, published in the Journal of The Military Service Institution of the United States, during the twelve months ending December 1st in each year.

"The award to be made by the Council of the Military Service Institution upon the recommendation of a board of three suitable persons, selected by the President of the National Society of the Army of Santiago de Cuba, who shall report their recommendations on or before January 1st of the following year.

"Conditions to be the same as those prescribed for the Hancock Prize (see notice 'Short Paper Prizes'), Military Service Institution, excepting that the competition shall be limited to officers of the Regular Army or of the National Guard below the grade of major, and that papers shall not be less than 2500, nor more than 5000 words in length."

The names of the gentlemen selected for the Board of 1905 are:

Major General J. Ford Kent, U. S. Army.
Brigadier General John F. Weston, U. S. Army.
Brigadier General George H. Harries, D. C. Militia.

T. F. RODENBOUGH,
Secretary M. S. I.

Governor's Island, N. Y.,
January 1, 1905.

Publisher's Department.

IDEAL 30-40 SHELL CHAMFERING REAMER

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all cases where the hard metal-covered bullets are to be used. They have, however, dropped the operation as a saving to themselves in shells where the metal-covered bullets are used.

These shells, however, should be chamfer reamed when they are to be reloaded with cast bullets. The cut here illustrates a handy implement for doing that work. The reamer is made of tool steel, hardened, tempered and ground to the proper shape. The shells require to be reamed but once. That once, however, should be done to insure the best work. Price of reamer $1.

* * *

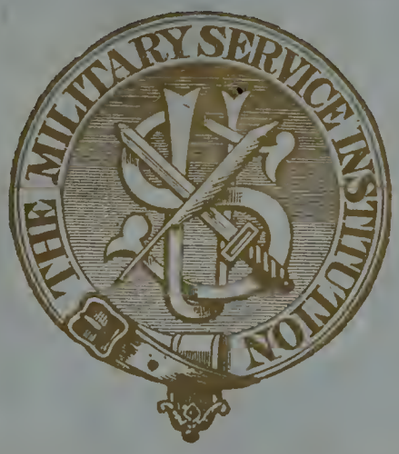
THE USE OF GLYCOZONE

BY C. H. POWELL, A.M., M.D., ST. LOUIS, MO.

(Abstract from *New England Medical Monthly.*)

It is surprising how physicians fall into habits regarding the use of certain agents in their practice, ! and how loth they are to resort to something new. No doubt this fact exemplifies the maxim: "Be not the first by whom the new is tried, nor yet the last to lay the old aside." This saying, were it put into active practice, would interdict the use of any new drug or remedy, as from the very nature of things a leader must be acknowledged, and that leader would himself violate the above maxim. In the treatment of certain diseases the well-known glycerole of tannin tampon, or the use of glycerin and Goulard's solution, or glycerin with other astringents, has been for years recognized and appreciated by gynecologists over the entire world. In the clinics, solutions of these agents are ever at hand. It has often occurred to the writer that many of the solutions used by gynecologists favored the development of bacilli. A sample bottle of glycozone which came to my desk several months ago although not referred to in the treatment of diseases of women, appealed to me. Accordingly, in view of the highly oxygenated properties of the remedy, which I believed would necessarily possess bactericidal properties, I was induced to try glycozone in my gynecological practice; the results were so pronounced, and the beneficial influence of the remedy so decided and permanent, that I have for several months past persistently resorted to glycozone in preference to anything else in my local work.

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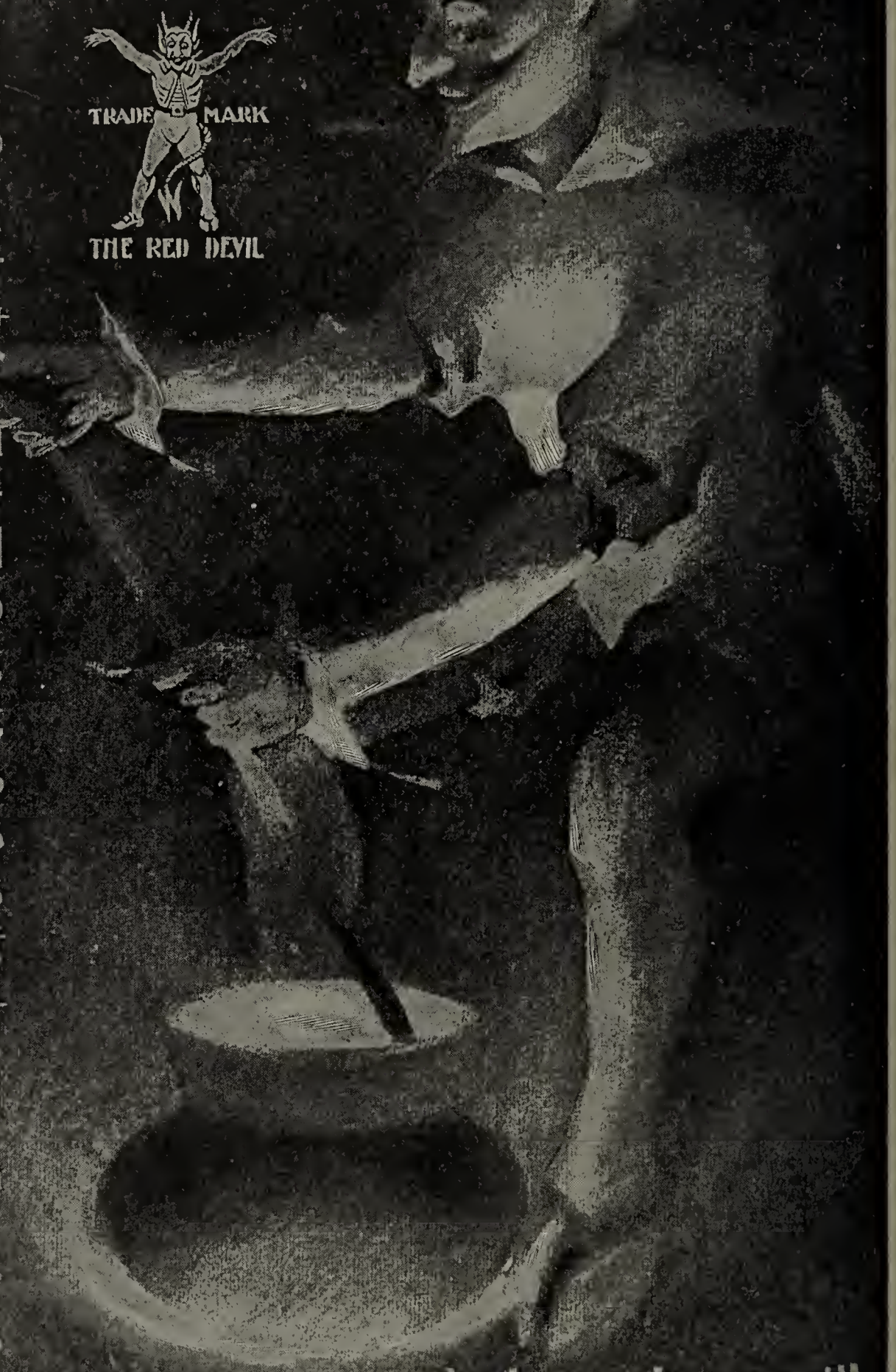
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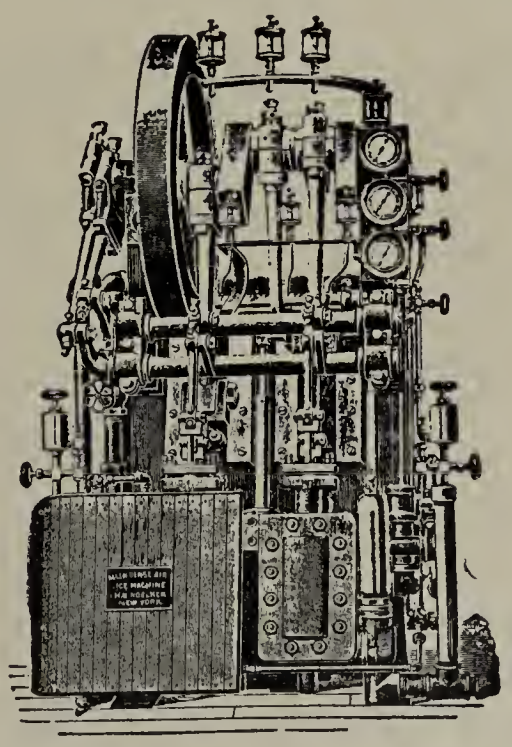
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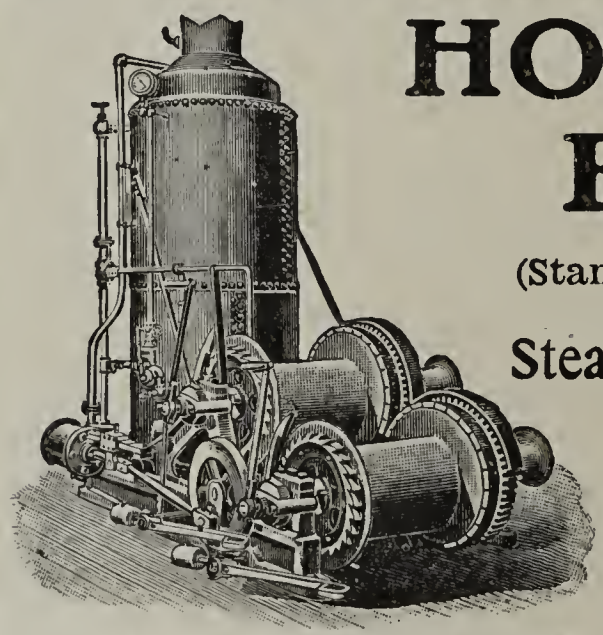
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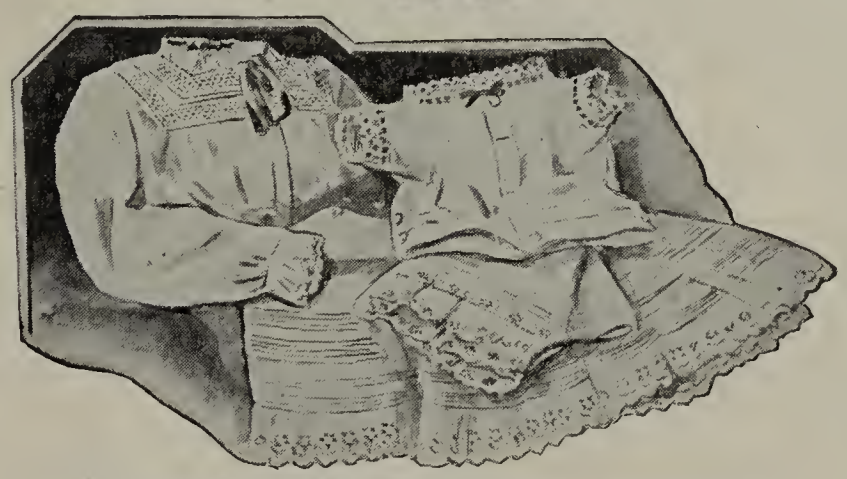
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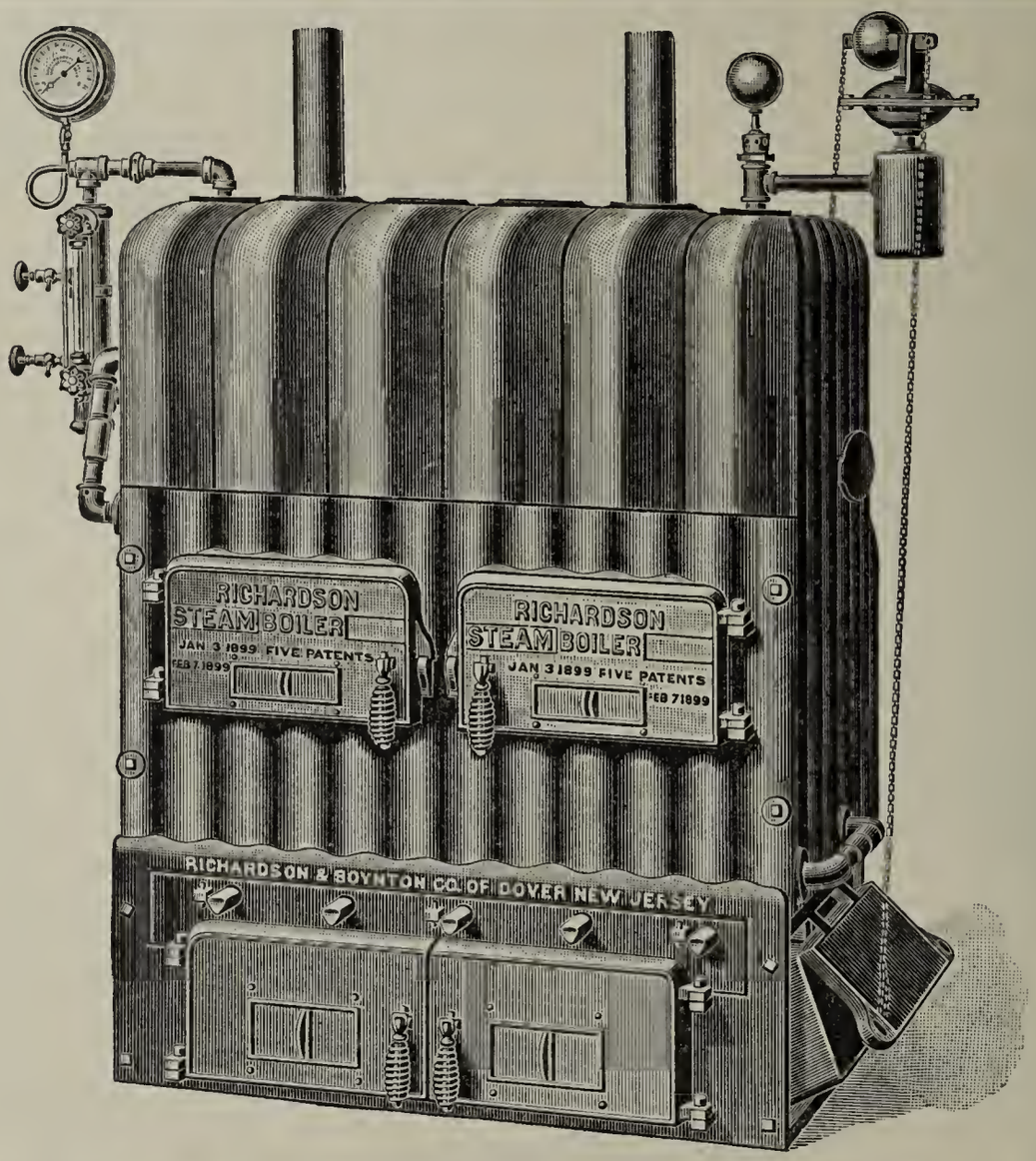
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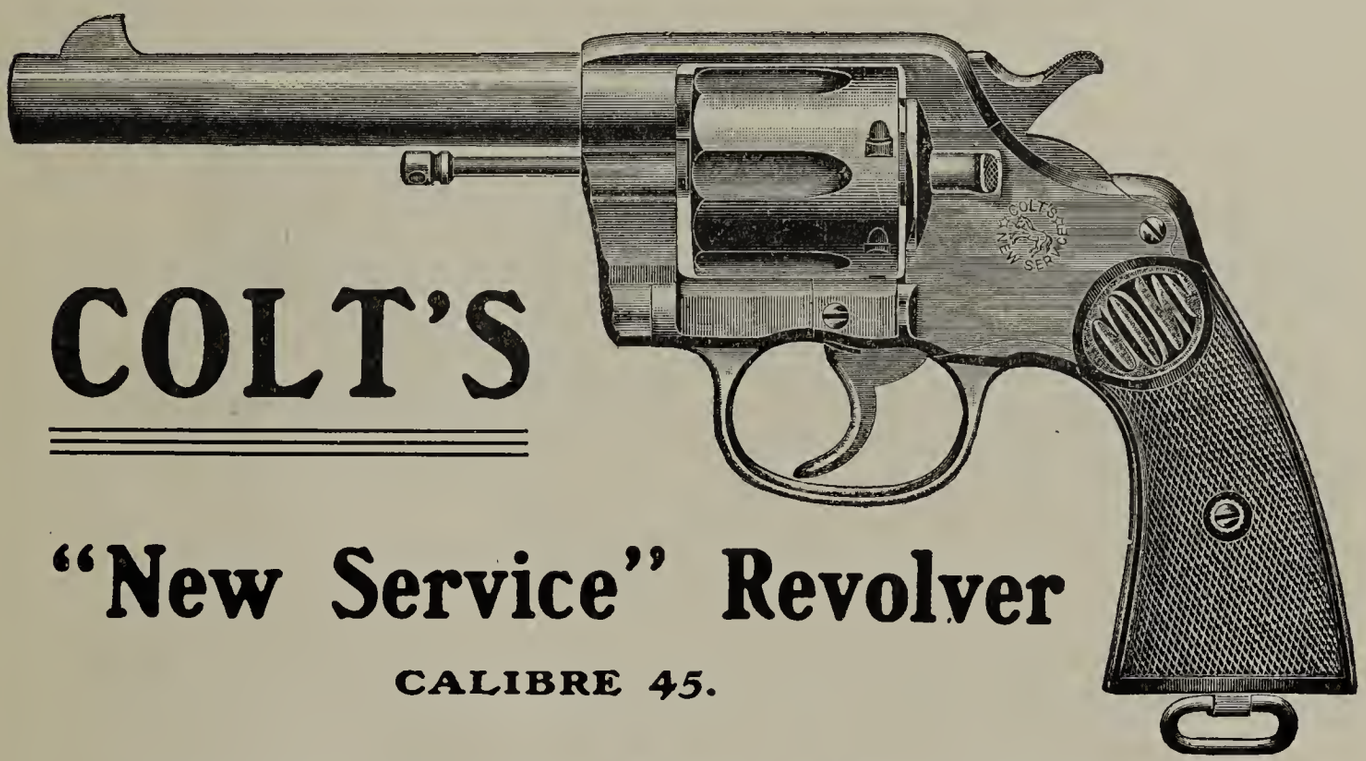
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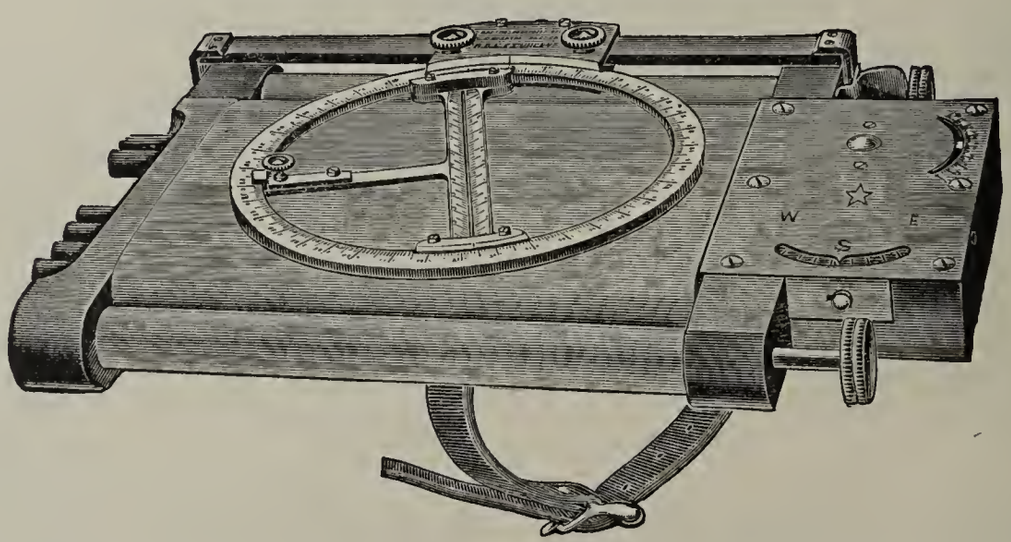
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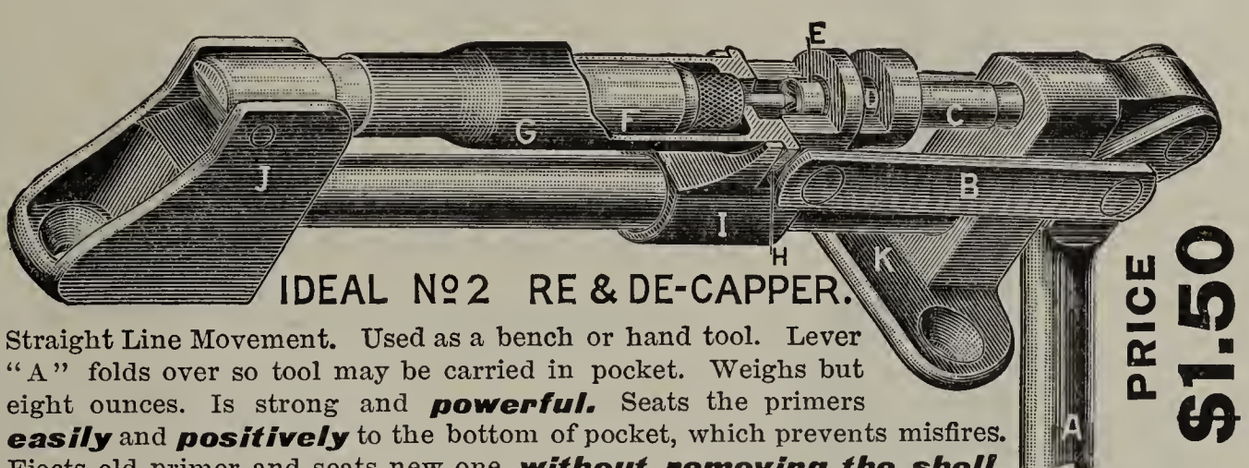
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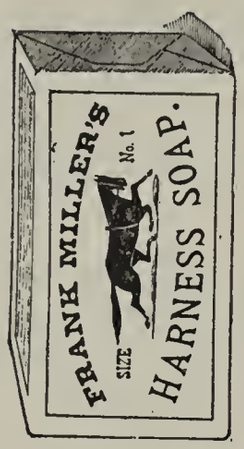


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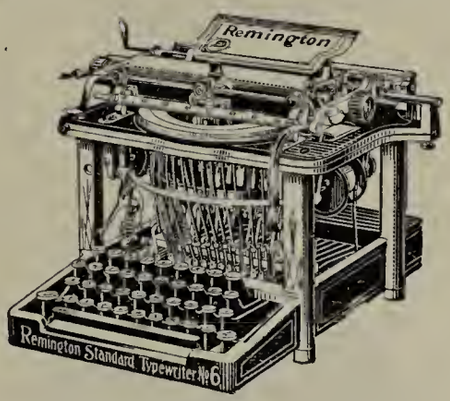
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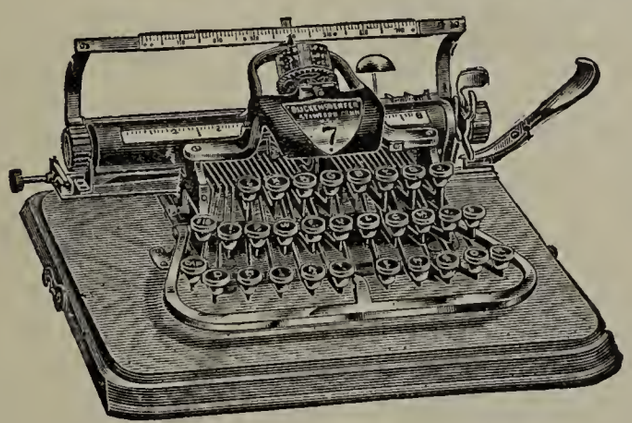
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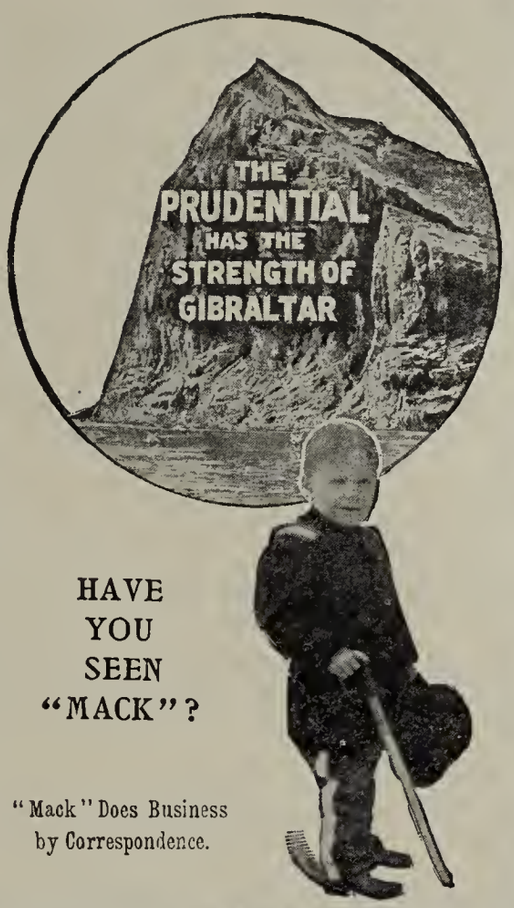
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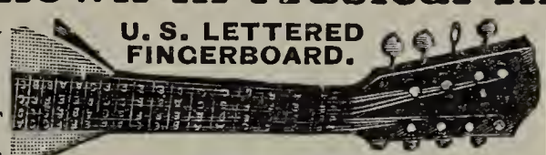
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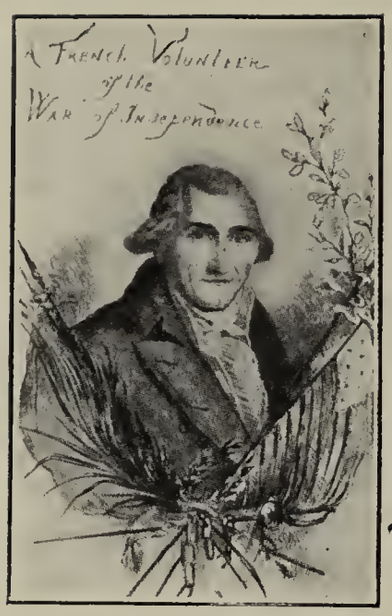
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A French Volunteer of the War of Independence.

THE Chevalier de Pontgibaud was one of the gallant little band of Frenchmen who "sick for breathing and exploit" crossed the Atlantic to aid the American colonists to gain their independence. He seems to have been a shrewd observer of men and events, and he had a keen sense of humor. From a diary which was published in the United States some years ago* a few extracts are here reprinted:

* * * * * * * * *

Paying the National Debt.

I heard one day (1789) that the Americans, who were increasing in prosperity year by year, were now in a condition to pay their back debts, and had decided that all officers who had fought in the War of Independence should, upon presentation, receive all their pay with interest to date. To me this was a real *peculium adventilium* for I had long since given up all hopes of ever seeing any of that money. I was glad to learn that there was a sum at my disposal, and without loss of time started for Hamburg to embark on the first vessel ready to sail for North America.

* * * * * * * * *

War Dept. Simplicity.

The Government officials were as simple in their manners as ever. I had occasion to call upon Mr. MacHenry, the Secretary of War. It was about eleven o'clock in the morning when I called. There was no sentinel at the door; all the rooms, the walls of which were covered with maps, were open, and in the midst of this solitude I found two clerks, each sitting at his own table, engaged in writing. At last I met a servant, or rather the servant, for there was but one in the house, and asked for the Secretary. He replied that his master was absent for the moment, having gone to the barber's to be shaved. Mr. MacHenry's name figured in the State Budget for $2000 (10,500 francs), a salary quite sufficient in a country where the Secretary for War goes in the morning to his neighbor, the barber at the corner, to get shaved.

* * * * * * * * *

This recalls to my mind the very singular recompense which the American Congress awarded to General Stark, the conqueror of Burgoyne.

---

*A *French Volunteer of the War of Independence.* (The Chevalier de Pontgibaud). By R. B. Douglas. N. Y., D. Appleton & Co., 1898.

The British general, dressed in a magnificent uniform covered with gold lace, and with a cocked hat on his head, had been obliged to surrender his sword to General Stark, who, for his part, wore an old blanket for a cloak, had a cotton cap stuck over one ear, and thick, heavy shoes on his feet. It was a typical representation of a poor and oppressed people triumphing over a rich and insolent monarchy. Congress, in a sudden accession of generosity, ordered that the conqueror should be presented with two ells of blue, and one of yellow, cloth to make him a coat, and half a dozen shirts of Dutch linen. I well remember hearing General Stark complain loudly in my presence, when he received this gift of the nation, that Congress had forgotten to give him any cambric to make the cuffs.

General Stark's Reward.

This fact, which in the present day would appear incredible, was made the subject of endless jokes in the English papers of the day, then ready enough to find any subject on which they could twit the conquerors.

* * * * * * * * *

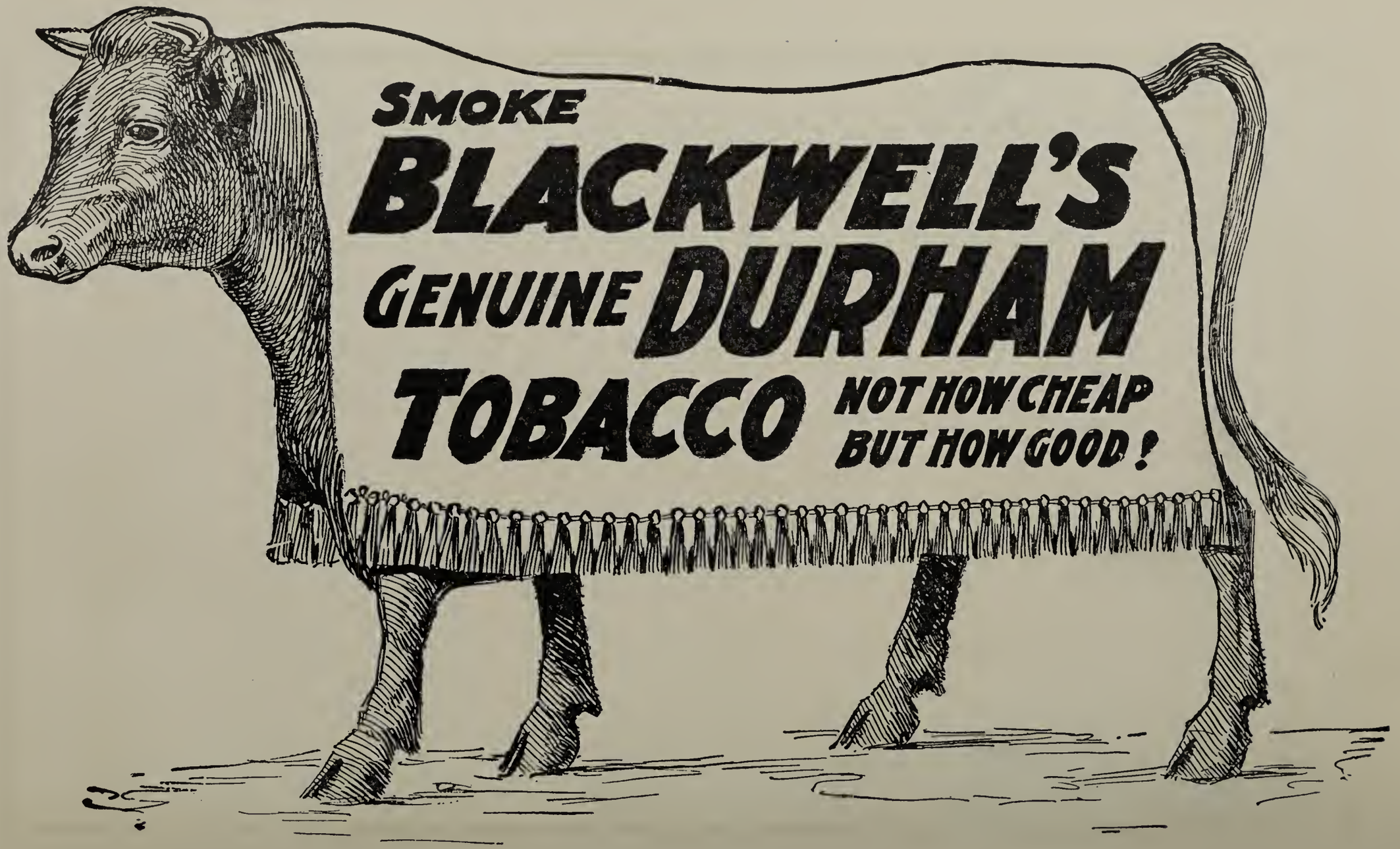
Mr. MacHenry, the Secretary of War, recalled to my mind the name of a French ex-Minister of War,* my old comrade, M. Duportail. I learned that my old friend was still in the United States, and that he had bought a little farm near the city, so I hastened to call upon him. I met him at a little distance from his house, and judge of my astonishment, or rather inclination to laugh, at finding him dressed in full French fashion, with his hat under his arm, though he was eighteen hundred leagues from Paris. It was ten years since the Revolution broke out, but he appeared to be still awaiting the news that his portfolio had been restored to him. That was his daily and hourly thought—a hobby as innocent as that of Uncle Toby—and after he had expressed his pleasure at seeing me again, his conversation was of nothing but the ingratitude of the French nation, and the admirable projects for the improvement of the army that he had intended to carry out.

A French Ex-Minister of War.

"Ah," he said, "how sorry I was to hear you had emigrated. What a fine chance of promotion you would have had if you had remained with us. You had been through the war in America, and when I was Minister, I would have given you whatever you asked for."

That would have been easy enough for him, it is true, but, all other considerations apart, his present condition was not calculated to make me regret the step I had taken, for all that remained to His Excellency of all his former grandeur, which had lasted but six months, was a little farm in the New World, a couple of leagues from the primeval forests, and within three days' journey of the borders of civilization.

**Louis L. B. Duportail*, Comd't Corps of Engrs., Brig.-Gen., Nov. 17, 1777; Maj.-Gen., Nov. 16, 1781 (in consideration of his meritorious services, and particularly of his distinguished conduct in the Siege of York in the State of Va.). Died 1793.


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